



01-28-08

AT 2

Letter Accompanying Appeal Brief (Amended)
Application No. 09/844,947
January 25, 2008

Attorney Docket No.: SP01-095

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Bradford Giles Ackerman, et al.

Serial No: 09/844,947

Filing Date: April 27, 2001

Title: METHOD FOR PRODUCING
TITANIA-DOPED FUSED
SILICA GLASS

Examiner: John Hoffman

Group Art Unit: 1731

LETTER ACCOMPANYING
APPEAL BRIEF

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

LETTER ACCOMPANYING APPEAL BRIEF (AMENDED)

This letter accompanies the Amended Brief on Appeal that is enclosed herewith and is made in response to the Notification of Non-Compliant Appeal Brief mailed December 26, 2006 and having a one (1) month term for response that expires January 26, 2008. Appellants believe that a no extension of time is necessary to make this Reply timely. However, in the event that appellants are in error, appellants respectfully request that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Amended Appeal Brief timely, and hereby authorize the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Letter Accompanying Appeal Brief (Amended)
Application No. 09/844,947
January 25, 2008

Attorney Docket No.: SP01-095

Appellants believe that they have fully replied to the items objected to in the above Notice. In the event that any pages are missing from the enclosed Amended Brief on Appeal, please contact the undersigned attorney of record.

Please direct any questions or comments to appellants' undersigned attorney or record, Walter M. Douglas, at (607) 974-2431.

Dated: 25 January 2008 By: Walter M. Douglas

Walter M. Douglas
Registration No. 34,510
607-974-2431
Corning Incorporated
Patent Department
SP-TI-03-01
Corning, NY 14831

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, No. EM087162582US, in an envelope addressed to Mail Stop Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on January 25, 2008.

Date of Deposit

Julie Henshaw
Julie Henshaw

**APPEAL BRIEF (Amended)
PATENT**

January 25, 2008

Attorney Docket No.: SP01-095

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Bradford Giles Ackerman, et al.

Serial No: 09/844,947

Examiner: John Hoffman

Filing Date: April 27, 2001

Group Art Unit: 1731

**Title: METHOD FOR PRODUCING
TITANIA-DOPED FUSED
SILICA GLASS**

**Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

Sir:

BRIEF ON APPEAL (Amended)

**This Amended Brief on Appeal is filed in response to the Notification of
Non-Compliant Appeal Brief mailed December 26, 2007.**

**This Brief supports the appeal to the Board of Patent Appeals and Interferences
from the Final Rejection dated March 12, 2007, in the above application listed above,
and the Advisory Action mailed August 9, 2007, maintaining all rejections. Appellants
mailed, by First Class Mail, a Notice of Appeal on August 31, 2007 in accordance with
37 C.F.R. § 41.31. A Return Postcard bearing the Patent Office stamped date of
September 4, 2007 was received. On October 17, 2007 Appellants received a Notice of
Abandonment mailed October 11, 2007. On October 18, 2007 Appellants mailed, by
Express Mail, a Petition for Revival of the present application on the grounds of a
Patent Office error. The Petition included documentation, specifically the Patent Office**

Appeal Brief
January 25, 2008
Application No. 09/844,947

stamped postcard, indicating that an Appeal was timely filed. ***On December 13, 2007 appellants received from the Patent Office a Decision Notice mailed December 10, 2007 indicating that their Petition to Revive the application under 27 C.F.R. §1.181 was GRANTED.***

Accordingly, Appellants believe that the date for timely filing of their Brief on Appeal is October 31, 2007 based on Appellants Notice of Appeal filing date of August 31, 2007 has been supported. Thus, Appellants submit this Brief is in accordance with 37 C.F.R. § 41.37.

I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is Corning Incorporated, assignee of the entire interest in this application by virtue of an assignment recorded 08/21/2001 at Reel/Frame 012100/0096.

II. RELATED APPEALS AND INTERFERENCES

With respect to the appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal, there are no such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-2, 4-9, 13, 15, 20, 21, and 23-24 are pending in the application.

Claims 1-2, 4-9, 13, 15, 20, 21, and 24 are under appeal.

Claim 23 is not under appeal and the rejection is not being contested.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Claims 3, 10-12, 14, 16-19 and 22-23 were previously cancelled.

Claims 16-19 were previously withdrawn from consideration due to a restriction requirement.

The present application was filed on April 27, 2001 with claims 1-19. An Office Action with a Restriction Requirement was mailed September 15, 2003, and in their Response applicants (now the Appellants) withdrew from consideration claims 16-19 with reservation of right to file a divisional application, cancelled claims 3, 10-12 and 14, and added new claims 20-23. A Final Office Action was mailed February 13, 2004 and applicants replied on April 13, 2004. Applicants received an Advisory Action mailed April 29, 2004 advising that the Final rejection would be maintained and the amendment would not be entered because it raised new issues.

Applicants filed a Request for Continued Examination on May 13, 2004 and received an Office Action mailed May 29, 2004. Applicants replied on September 21, 2004 and received a Final Office Action mailed January 21, 2005. Applicants filed a response on March 11, 2005 and received an Advisory Action mailed March 29, 2005 indicating that the Final Rejection of the claims would be maintained and that the amendments submitted in applicants' Response would not be entered because they raised new issues that would require further consideration and/or search. Applicants filed their First Notice of Appeal on April 11, 2005. On June 3, 2005 applicants timely filed a Brief on Appeal. Between June 3, 2005 and April 12, 2006 the Brief on Appeal was revised four times pursuant to a Notice from the Patent Office and filed the new Brief(s), the last filing being April 12, 2006.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Applicants received an Office Action mailed June 6, 2006 indicating that in view of their Appeal Brief of April 12, 2006, **prosecution was reopened** and new grounds for rejection were given. Applicants replied on October 25, 2006, received a Notice of Non-compliant Amendment mailed December 14, 2006 and replied to the Notice on December 21, 2006. Applicants received a Final Rejection mailed March 12, 2007 and replied to the Rejection on May 23, 2007. Applicants received an Advisory Action mailed August 9, 2007. Applicants replied to the Advisory Action by mailing a Notice of Appeal (with a request for an extension of time) with a Return Postcard on August 31, 2007. The Postcard was returned indicating that the Notice of Appeal and other papers were received by the Patent Office on September 4, 2007.

On October 17, 2007 applicants received a Notice of Abandonment mailed October 11, 2007. On October 18 2007 applicants filed a Petition For Revival Of An Unavoidable Abandoned Patent Application, indicating their belief that the abandonment was due to a Patent Office Error. A copy of the Return Postcard bearing the Patent Office stamp was enclosed as proof that the Appeal was time made. At the time this brief was originally filed applicants, now Appellants, have not received a reply from the Patent Office regarding their Petition for Revival. ***On December 13, 2007 appellants received from the Patent Office a Decision Notice mailed December 10, 2007 indicating that their Petition to Revive the application under 27 C.F.R. §1.181 was GRANTED.***

Appellants now submit this Brief on Appeal in order to be timely in with regard to its submission and further in the belief that their Petition for Revival will be granted.

In view of the fact that applicant last amendment of May 23, 2007 was not entered by the Examiner, the claims under appeal are those that were present in the application prior to May 23, 2007.

A copy of the claims under appeal is attached in the appendix.

IV. STATUS OF AMENDMENTS

Appellants Amendment after Final Rejection was filed on May 23, 2007 and *has not been entered*. Thus, for purposes of this Appeal the Amendment filed May 23, 2007 should be considered as not having been made due to the Examiner's rejection of the Amendment and statement that further prosecution would require an additional search. *The claims presented herein are those that existed at the time the Final Office Action was issued*

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is the only independent claim. Claims 2, 4-9, 13, 15, 20, 21, and 23-24 depend on claim 1 either directly or indirectly through another dependent claim. The claimed invention relates to a method for producing a fused silica glass containing titania (a SiO₂-TiO₂ glass).

Claim 1 is directed to a method for producing a fused silica glass containing titania [page 2, lines 17-18] by synthesizing particles of silica and titania by delivering a mixture of a silica precursor and a titania precursor to a burner [page 2, lines 18-19; page 3, lines 3-5; page 4, lines 4-14; and page 5, lines 1-3]; growing a column of a porous preform [page 3, lines 19-21 and page 5, lines 1-13 and **particularly lines 5-6**

in combination with Figures 1 and 2, numeral 40 showing the column growing] by successively depositing the particles on a deposition surface [page 2, lines 19-21; page 3, lines 5-6; and page 4, lines 15-24; (a *deposition surface is also called a "bait" by those skilled in the art*)] at a temperature below the minimum temperature at which the particles can consolidate into a glass [page 3, lines 8-10 and original claim 3] while successively translating the deposition surface away from the burner [page 3, lines 19-22; page 3, line 19; page 4, lines 19-24; and page 5, lines 6-8]; and subsequently consolidating the porous preform into dense glass [page 2, line 21-22; page 3, lines 5-6; and page 5, lines 14-19].

Claim 2 depends on and further limits claim 1. Claim 2 states that the translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface {a.k.a. "bait"} and the burner during deposition [page 4, lines 21-26 for all].

Claim 4 depends on and further limits claim 1. Claim 4 states that the consolidation of the porous preform is carried out at a temperature in the range of 1200 to 1900 °C [page 5, lines 16-19].

Claim 5 depends on and further limits claim 1. Claim 5 states that the porous preform can be dehydrated by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation [page 3, lines 10-13 and lines 21-22; and page 5 lines 15-26].

Claim 6 depends on and further limits claim 5. Claim 6 states that the halide-containing atmosphere comprises chlorine [page 5, lines 14-24].

Claim 7 depends on and further limits claim 5. Claim 6 states that the halide-containing atmosphere comprises fluorine [page 5, line. 24-26].

Claim 8 depends on and further limits claim 5. Claim 8 states that the temperature of the heated, halide-containing atmosphere is in the range of from 900 to 1100 °C [page 5, lines 21-22].

Claim 9 depends on and further limits claim 1. Claim 9 states that the glass contains 2 to 12% by weight titania [page 5, lines 27-28].

Claim 13 depends on and further limits claim 5. Claim 13 states that the translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface {a.k.a. "bait"} and the burner during deposition [page 4, lines 21-26 for all].

Claim 15 depends on and further limits claim 5. Claim 15 states that the consolidation of the porous preform is carried out at a temperature in the range of 1200 to 1900 °C [page 5, lines 16-19].

Claim 20 depends on and further limits claim 1. Claim 20 states that the minimum [consolidation] temperature is 1200 °C [page 5, lines 16-18 which indicates that the minimum temperature for consolidation is 1200 °C].

Claim 21 depends on and further limits claim 20 [page 3, lines 8-10 in combination with page 1, line 28, to page 2 line 2, which indicate that conventional boule consolidation temperatures are 1200 to 1900 °C].

Claim 23 is not under appeal and the rejection is not being contested.

Claim 24 depends on and further limits claim 1. Claim 24 states that the deposition surface is rotated relative to the burner which successively depositing the particles on the deposition surface [page 2, lines 21; page 3, line 19; and 4, lines 19-23]

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claims 1-2, 4-9, 13, 15, 20, 21, and 23-24 stand rejected under 35 U.S.C. §112, first paragraph. [Claim 23 is not under appeal and the rejection is not being contested.]**

The Examiner has stated that claims 1-2, 4-9, 13, 15, 20, 21, and 23-24 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. That is, the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The Examiner states:

1st s Statement (Final Office Action, page 2, lines 8-12)

“Examiner could find no support for the claimed “column of solid porous perform”, or “solid porous”, “successively translating”, “a deposition surface at a temperature below the minimum temperature at which the particles can consolidate” - either explicit or implicit. This is deemed to be a *prima facie* showing of failure to comply with the requirement.” [Office Action of 03/12/07, page 2, approximately lines 13-18.]

The Examiner further states:

2nd Statement

“Moreover, it is clear that at least the temperature limitation and “while successively translating” cannot be implicitly supported - because they are impossible. The terms “while” and “successively” are two mutually exclusive conditions: ‘while’ means simultaneously, and “successively” means following each other. Nor can a translation be successive with itself - at best it would have to be successive with some other translation. But there is no support for two successive translations (that the Examiner can find) - Applicant cannot now claim two successive translations when the specification does not provide support therefor. As to the temperature limitation, the particles could not stick to the support or to each other if the temperature is as low as claimed. In other words, Applicant is correct in arguing that Blackwell does not meet the temperature limitation - but for the same reason. Applicants’ invention does not provide support therefor.” [Office Action of 03/12/07, page 2, approximately line 19 to page 3, line 7.]

The Examiner additionally states:

3rd Statement

“Either something is solid or it is porous, it cannot be “solid porous - or if it could possibly be, there would have to be support for such in the specification. The only mention of “solid” in the specification that the Examiner could find is in reference to dense, solid glass.” [Office Action of 03/12/07, page 3, lines 8-11.]

The Examiner further states:

4th Statement

“There is no support for claims 20-21. Applicant does not dispute this, thus it is deemed that applicant acquiesces on this point.”

- B. Claims 1-2, 4-9, 13, 15, 20, 21, and 23-24 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Claim 23 is not under appeal and the rejection is not being contested.**

The Examiner states:

5th Statement

In his fifth statement the Examiner stated that “Applicants has not disputed this rejection, thus it is deemed that applicant

acquiesces that the claims fail to particularly point out and distinctly claim the subject matter.”

6th Statement

“Claim 1: it is not understood that is meant by “column of solid porous preform” - is unclear if it means “column of solid glass or a porous preform”, or “a porous column of solid preforms” or something else. As alluded to above, the term “solid porous” is indefinite as to its meaning. And, it is unclear what is meant by “while successively” - since these two words connote mutually exclusive conditions (see above).”

7th Statement

“Claim 5: it is unclear if the ‘consolidation’ refers to the consolidating step or claim 1, or if it is open to any consolidation.”

8th Statement

“Claim 21: There is noted that there is no antecedent basis for “the temperature at which the particles are deposited” = it is unclear if the claim is directed to the actual deposition temperature, or if it is directed to the temperature of the deposition surface.”

VII. ARGUMENTS

For the convenience Board of Patent Appeals and Interferences (the "Board") convenience, a copy of the (1) Final Office of March 12, 2007, Appellants' Response of May 23, 200, and Appellants Response of December 2, 2006 are attached in the Evidence Appendix. These attachments are necessary for a complete showing that Appellants have fully replied to all rejections and that the Examiner's statements in the Final Office Action the Appellants did not respond to certain items is incorrect.

A. 35 U.S.C. §112, first paragraph rejections - Appellants Response.

In support of the arguments made herein, Appellants' have included **complete copy** of their Response of May 23, 2007 in the Evidence Appendix.

In Moba B.V. v. Diamond Automation Inc., 66 USPQ2d 1419, 1437 (Fed. Cir. 2003) the Court of Appeals for the Federal Circuit reiterated that a "patent specification must contain an adequate written description. 35 U.S.C. §112, ¶ 1 (1994). The court further stated that "The written description requirement does not require the applicant 'to describe exactly the subject matter claimed, [instead] the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed'" *Id* at 1439 (brackets in the text, citation omitted in text). The court went on to say, in reference to Enzo [*Enzo Biochem, Inc v. GenProbe, Inc*, 63 USPQ2d 1609 (Fed. Cir. 2002)] and and Amgen [*Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 65 USPQ2d 1385, 1387 (Fed. Cir. 2003)], that "the record showed that the specification that taught one of skill in the art to make and use the invention also convinced the artisan that the inventor possessed the invention." In the present case, Appellants'

specification, read together with the figures, teaches one of skill in the art the claimed method of aking titania-doped silica glass as will be shown by citations below to the specification and figures.

The court further stated thatThe court further stated that “the patent specification must disclose information sufficient to enable those skilled in the art to make and use the claimed invention. Id at 1439. In addition the court

Examiner’s 1st Statement

Appellants submit that the Examiner is mistaken in his conclusions and that all the terms in the Examiner’s 1st Statement are supported by the specification and would be understood by one skilled in the art. Further, Appellants assert that it is well understood that the claims must be read in light of the specification and the figures that may accompany it. In the present case the specification is accompanied by two (2) drawings.

Claim 1 states that the a column of a solid porous preform is grown by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate either partially or fully into dense glass while successively translating the deposition surface away from the burner.

Appellants now refer to the specification on page 4, lines 15-24, and Figures 1 and 2 which describe and illustrate the formation of the solid porous preform 40 by the deposition of the soot from burners 28 on the deposition surface (“bait”) 34 which is attached by a pin 35 to a spindle 36 that can be ascended (i.e., “translated”) upward [see

the arrow on the spindle in the Figures] by means of the motor drive 38. The specification on page 5, lines 5-6 states: "The soot is deposited on the lower end of bait 34 to form a columnar porous preform."

One skilled in the art, after reading the foregoing sections of the specification and viewing the Figures would clearly understand that using the process steps as described one:

- can continuously grow the preform 40, and
- that the preform is a porous solid as stated by applicants,
- that the preform is in the form of a column (columnar), and
- that the columnar solid porous preform is formed as a result of the upward translation of the bait during the deposition of the soot.

One skilled in the art would also understand that the solid columnar preform is **also porous** because the chlorine treatment step described on page 5, lines 14-16 requires that the preform be porous in order for the chlorine to penetrate the preform to form and remove volatile metal chlorides and also to remove OH from the glass structure.

Regarding the temperature at which the deposition is carried out, Claim 1 states the particles are deposited on a deposition surface (e.g., the "bait") at a temperature below a minimum temperature at which the particles can consolidate either partially or fully into dense glass while successively translating the deposition surface away from the burner.

The Detailed Discussion (page 5, lines 16-19) indicates that consolidation temperatures are typically in the range of 1200-1900 °C, with a preferred range being 1300-1700 °C. The specification indicates on page 3, lines 8-10, states that

consolidating the glass in a separate step eliminates the need to capture the soot at consolidation temperatures and permits the soot to be captured at a lower temperature, typically 200-500 °C lower, than possible with the conventional boule process [a process in which the soot is captured at consolidation temperatures; see page 5, lines 16-19 for preform consolidation temperatures]. Using the foregoing information, one skilled in the art would understand that applying the “200-500 °C lower temperatures” to the 1200-1900 °C range results in a “minimum temperature of 1000 °C and applying the 200-500 °C lower temperatures to the preferred 1300-1700 °C range results in a minimum temperature of 1100 °C. Further, one skilled in the art reading the “chlorine treatment” temperature range of 900 - 1100 °C would further understand that the “minimum temperature” can correspond to this range because chlorine purification requires that the gas penetrate the preform and that this is done prior to consolidation.

Consequently, Appellants submit that the specification fully supports the terms the Examiner complained of in his 1st Statement and that the specification fully supports these terms as used in claim 1 and claims 2, 4-9, 13, 15, 20, 21, and 24.

Examiner's 2nd statement

The Examiner states the at least the "temperature limitation" and "while successively translating" cannot be implicitly supported - because they are impossible.

First, regarding the temperature limitation, In their comments above concerning the Examiner's 1st Statement, Appellants, *citing page and line*, have shown that the temperature limitation (that is, the "minimum temperature") is fully supported by the specification and have also shown how one skilled in the art would understand and be able to practice the invention. Those comments, given above, are:

"The background art (page 2, line 1) and the Detailed Discussion (page 5, lines 16-19) both indicate that consolidation temperatures are typically in the range of 1200-1900 °C, with a preferred range being 1300-1700 °C. The specification indicates on page 3, lines 8-10, states that *consolidating the glass in a separate step eliminates the need to capture the soot at consolidation temperatures and permits the soot to be captured at a lower temperature*, typically 200-500 °C lower, than possible with the conventional boule process [a process in which the soot is captured at consolidation temperatures; *see page 5, lines 16-19 for preform consolidation temperatures*]. Using the foregoing information, one skilled in the art would understand that applying the "200-500 °C lower temperatures" to the 1200-1900 °C range results in a "minimum temperature of 1000 °C and applying the 200-500 °C lower temperatures to the preferred

1300-1700 °C range results in a minimum temperature of 1100 °C. Further, one skilled in the art reading the “chlorine treatment” temperature range of 900 - 1100 °C would further understand that the “minimum temperature” can correspond to this range because chlorine purification requires that the gas penetrate the preform and that this is done prior to consolidation.”

Second, regarding the phrase “while successively translating,” this rejection is incorrect because the phrase was taken out of context by the Examiner. The only translation described is the specification is the upward translation of the bait and the “growing columnar solid porous preform” as it is grown on the bait {page 4, lines 15-24, and particularly lines 23-24}.

The relevant part of claim 1 reads as follows:

“ . . . growing a column of solid porous preform by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate into dense glass

while successively translating the deposition surface away from the burner . . . “

Properly read the above clauses indicate that two events are occurring. The first event is that the soot particles are being deposited on the deposition surface (the “bait”) to make the preform. The second event is that as the preform is being made the bait is

being moved away from the burner. It is a result of these two events is that one forms the columnar solid porous preform. The specification at page 4, lines 25-26 clearly indicates that the "Burner placement is fixed and the bait speed is adjusted to maintain constant burner-to-preform distance during deposition" [of the soot]. The specification on page 4, lines 23-24 also indicate that the "speed at which the bait ascends is critical to the temperature profile and shape of the porous preform 40 formed on the bait 34."

Appellants submit that the foregoing sections of the specification, viewed also in the light of the Figures, clearly indicate that the solid porous columnar preform is formed in a continuous manner while the bait [on which the preform is being made] is being slowly translated upward.

Third, the Examiner has also made comments concerning "two successive translations". There is only a single translation described in the process. The Examiner's comments can only be due a mistake due to an improper reading of the claim.

Appellants submit that the Examiner is mistaken in his assumption in view of what the specification actually recites.

Fourth, the Examiner has baldly stated that "... the particles could not [emphasis added] stick together if the temperature is as low as claimed." The Examiner mentions Blackwell (U.S. Patent No 5,152,819) as not meeting Appellants' temperature limitation for the same reason. However, the fact that Blackwell does not mention what applicants teach and have done is not a reason for rejection; rather it is an inventive step in an inventive method of making a solid porous columnar preform. In this instance the Examiner is portraying himself as 'one skilled in the art'. There is no support for the

Examiner's statement in Blackwell or any other art the Examiner has cited during prosecution. The fact is that using the method of the invention and the apparatus as illustrated in Figures 1 and 2, the particles to 'stick together' to form a columnar solid porous preform as described.

In contrast to Blackwell et al., Appellants state in claim 1, lines 5-7, that the particles (soot) formed are deposited on "... a deposition surface at a temperature below a minimum temperature at which the particles can consolidate either partially or fully into dense glass . . ." Thus, Appellants specifically teach that the preform is formed at a temperature below that at which consolidation of the deposited particles [soot] into a glass can occur. Appellants are not required to supply a theory or hypothesis as to why in their method the soot "sticks together" and forms a solid porous preform.

Therefore, Appellants submit that the Examiner is mistaken in his assumption in view of what the specification actually recites and that this ejection should properly be reversed.

Examiner's 3rd Statement

In his 3rd Statement the Examiner say that "Either something is solid or it is porous, it cannot be "solid porous - or it could possibly be there have to be support for such in the specification"

Reading the specification in consideration of the figures, Appellants submit that there is full support for their method forming a "solid porous preform." The specification at page 5, lines 5-6 states that "the soot is deposited on the lower end of

Appeal Brief
January 25, 2008
Application No. 09/844,947

bait 34 to form a columnar porous preform. One skilled in the art, reading the specification in view of the Figures, would clearly understand that the invention describes the formation of a “solid porous article”, in this case the silica-titania soot perform.

The phrase “solid porous” is not contradictory. There are articles which can be described as “solid porous” which are known not only to those within technical fields, but also to the general public. For example, sponges, molecular sieves, diesel filter traps, and activated carbon used to remove hazardous gases and also trap fuel fumes in vehicles and/or at refuelling stations. Appellants submit that the Examiner is in error regarding his statement that something cannot be both porous and solid. His statement contrary to experience.

Examiner's 4th Statement

The Examiner has stated: “There is no support for claims 20-21. Applicants does not dispute this, thus it is deemed that applicant acquiesces on this point.”

The Examiner is correct, *but only in so far as the rejection of claims 20-21 was not in Appellants' Response dated October 25, 2006* in response to the Office Action of June 6, 2006. By mistake this rejection was not answered in the October 25, 2006 Response.

However, when the 4th Statement was made in the Office Action of March 12, 2007, Appellants did reply in their Response of May 23, 2007 on page 8. Appellants there stated:

“The Examiner also states that applicant has acquiesced that there is no support for claims 20 and 21. Applicants traverses. Claims 20 and 21 are as follows.

“20. (previously presented) The method of claim 1, wherein the minimum temperature is approximately 1200°C.

“21. (previously presented) The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.

“Regarding claim 20, applicants refer the Examiner to the Specification on page 5, lines 16-18, in which applicants indicate that consolidation temperatures are “typically in the range of 1200 to 1900 °C.” The lower temperature is 1200 °C. Those skilled in the art would understand that 1200 °C would be the minimum consolidation temperature. Applicants also refer the Examiner to page 3, lines 5-7 which indicate (1) that performing consolidation in a separate step allow eliminates the need to capture soot at consolidation temperatures and (2) that this allows the soot to be deposited at lower temperatures, typically 200 to 500 °C lower than in conventional boule processes. Applicants submit that the specification supports both claims 20 and 21 and that one skilled in the art would understand this and would understand exactly what these claims mean.”

Appeal Brief
January 25, 2008
Application No. 09/844,947

While the Examiner did not enter the ‘Amendment’ because he deemed that it raised new issues and introduced new matter [into the claims], Appellants did respond to the rejection.

However, since this rejection is currently pending, Appellants submit that the above response properly replies to the rejection of amendments to the claims and Specification. It should be noted that the language inserted into the specification at page 3, line 11, was the following sentence taken from the **original claim 14**.

The inserted sentence was:

“That is, the silica and titania particles are deposited at a temperature below that required to consolidate the porous preform into dense glass.”

Original claim 14 stated:

“The method of claim 10, wherein the silica and titania particles are deposited at a temperature below that required to consolidate the porous preform into dense glass.”

Since this language was originally present in the application, Appellants believe that there is no “new matter” issue and that insertion into the cited paragraph is permissible since the language appear in the specification and claims as-filed.

B. 35 U.S.C. §112, second paragraph rejections - Appellants' Response

In *Verve LLC v. Crane Cams Inc.*, 65 USPQ2d 1051 (Fed. Cir. 2002), the Court of Appeals for the Federal Circuit reversed a district court finding that the expression “substantially constant wall thickness” in the claims is not supported by the specification and prosecution history by a substantially clear definition of “substantially”. Id at 1053. This is similar to what the Examiner in the present case has indicated to Appellants with regard to “solid porous preform”, “columnar solid porous preform”, “while successively” and other hrases Appellants has used.

In its decision the court overturned the district court, stating:

“We conclude that the court erred in law, in requiring that intrinsic evodence of the specification and prosecution history is the sole source of meaning of words that are used on a technologic context. While reference to intrinsic evidence is primary in interpreting claims, the criterion is the meaning of words as they would be understood by persons in the field of the invention. Patent documents are written for persons familiar with the relevant field; the patentee is not required to include in the specification information readily understood by practioners, lest every patent be required to be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field.” Id at 1053-1054.

In the present case, Appellants' specification, read together with the figures, would clearly be understood by one skilled in the art of the field of the invention. For example, such skilled persons would be familiar with the formation of preforms and know that soot from burners, can form a solid porous stucture. Such skilled person reading Appellants' specification to together with the figures would know how to practice the claimed method of making titania-doped silica glass.

Examiner's 5th Statement

In his fifth statement the Examiner stated that "Applicants has not disputed this rejection, thus it deemed that applicant acquiesces that the claims fail to particularly point out and distinctly claim the subject matter."

The Examiner is correct only in so far specific mention was not made to the §112, second paragraph rejections in the Office Action Response of October 25, 2006, However, in their Response of May 23, 2007, in which Appellants sought to amend claims and the specification, Appellants sought to correct the alleged defect.

Appellants believe that had the amendments of their response of May 23, 2007 been entered, any defects that may have been present would have been corrected. In their May 23, 2007 response on page on page 9, Appellants specifically stated:

"... the rejections given under 35 U.S.C. §112, second paragraph, are moot in view of the amendments to the specification, for clarity, and the arguments given above which are incorporated herein in their entirety." [Emphasis added].

The specific rejection under §112, second paragraph, are the same as those given under §112, first paragraph and Appellants believed that the same arguments they made in regard to the §112, first paragraph, rejections. Thus, Appellants did present a "good faith" argument, which of course was not entered. The specific §112, second paragraph, rejections were directed to claims 1, 5 and 21 and are dealt with in Appellant's response below regarding the **Examiner's 6th, 7th and 8th Statements.**

Examiner's 6th Statement

The Examiner's 6th Statement states:

“Claim 1: it is not understood that is meant by “column of solid porous preform” - is unclear if it means “column of solid glass or a porous preform”, or “a porous column of solid preforms” or something else. As alluded to above, the term “solid porous” is indefinite as to its meaning. And, it is unclear what is meant by “while successively” - since these two words connote mutually exclusive conditions (see above).”

This rejection is the same as that made in the Examiner's 1st and 2nd Statement as indicated above, though in combined form in this instance.

Claim 1 states that the a column of a solid porous preform is grown by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate either partially or fully into dense glass while successively translating the deposition surface away from the burner.

First, Appellants now refer to the specification on page 4, lines 15-24, and Figures 1 and 2 which describe and illustrate the formation of the solid porous preform 40 by the deposition of the soot from burners 28 on the deposition surface (“bait”) 34 which is attached by a pin 35 to a spindle 36 that can be ascended (i.e., “translated”) upward [see the arrow on the spindle in the Figures] by means of the motor drive 38. The specification on page 5, lines 5-6 states: “The soot is deposited on the lower end of bait 34 to form a columnar porous preform.”

One skilled in the art, after reading the foregoing sections of the specification and viewing the Figures would clearly understand that using the process steps as described one:

- can continuously grow the preform 40, and
- that the preform is a porous solid as stated by applicants,
- that the preform is in the form of a column (columnar), and
- that the columnar solid porous preform is formed as a result of the upward translation of the bait during the deposition of the soot.

One skilled in the art would also understand that the solid columnar preform is **also porous** because the chlorine treatment step described on page 5, lines 14-16 requires that the preform be porous in order for the chlorine to penetrate the preform to form

Second, regarding the phrase “while successively” (or “while successively translating”) this rejection is incorrect because it taken out of context. The only translation described in the specification is the upward translation of the bait and the “growing columnar solid porous preform” as it is grown on the bait {page 4, lines 15-24, and particularly lines 23-24}.

The relevant part of claim 1 reads as follows:

“ . . . growing a column of solid porous preform by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate into dense glass

while successively translating the deposition surface away from the burner . . . “

Properly read the above clause indicates that two events are occurring. The first event is that the soot particles are being deposited on the deposition surface (the “bait”) to make the preform. The second event is that as the preform is being made the bait is being moved away from the burner. As the preform forms on the bait and the bait ascends away from the burners [page 4, lines 23-24 and Figures 1 and 2] the deposition surface becomes the that part of the preform that has been deposited on the bait. *It is a result of these two events is that one forms the columnar solid porous preform.* The specification at page 4, lines 25-26 clearly indicates that the “Burner placement is fixed and the bait speed is adjusted to maintain constant burner-to-preform distance during deposition” [of the soot]. The specification on page 4, lines 23-24 also indicate that the “speed at which the bait ascends is critical to the temperature profile and shape of the porous preform 40 formed on the bait 34.”

Appellants submit that the foregoing sections of the specification, viewed also in the light of the Figures, clearly indicate that the solid porous columnar preform is formed in a continuous manner while the bait [on which the preform is being made] is being slowly translated upward.

Examiner’s 7th Statement

The Examiner’s 7th Statement states:

“Claim 5: it is unclear if the ‘consolidation’ refers to the consolidating step of claim 1, or if it is open to any consolidation.”

Claim 5 states:

5. The method of claim 1, further comprising dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation.

Claim 5 depends only on claim 1. Claim 1 claims only one consolidation step and the specification indicates that there is only one consolidation step. Consolidation temperatures are given in the specification, for example, in the Detailed Discussion on page 5, lines 16-19, which indicates that consolidation temperatures are typically in the range of 1200-1900 °C, with a preferred range being 1300-1700 °C. Consequently, the specification is clear as to the meaning “consolidation” and that the temperature range for consolidation is 1200-1900 °C, with a preferred range being 1300-1700 °C.

8th Statement

The Examiner’s 8th Statement states:

“Claim 21: There is noted that there is no antecedent basis for “the temperature at which the particles are deposited” = it is unclear if the claim is directed to the actual deposition temperature, or if it is directed to the temperature of the deposition surface.”

Claim 21 depends on claim 20 and states that the temperature at which the particles are deposited is approximately 200 to 500 °C less than the minimum temperature [required for consolidation].

Claim 20 depends on claim 1 and states that the minimum temperature is 1200 °C.

Claim 1 states that the particles are deposited on a deposition surface below the minimum temperature required to consolidate the particles into a dense glass. One skilled in the art would understand that the phrase “minimum temperature required to consolidate the particles into a dense glass” to mean that below this temperature the particles would not consolidate into a dense glass.

In order to properly understand claim 1, it is necessary to discuss the claims in reverse order. That is, in the order of claim 1, then claim 20 and finally claim 21.

First, reading claim 1 in the light of the specification and the drawings, it is clear, to one skilled in the art, that the deposition surface (“bait”) is **initially** located a distance from the burners and that the required distance is one such that the particles being deposited are deposited at a temperature below the consolidation temperature of the preform that is to be formed (page 3, lines 8-10) and ultimately consolidated by heating at a temperature in the range of 1200 to 1900 °C [page 5, lines 16-19]. Since the specification states that consolidation temperatures are in the range of 1200-1900 °C (and preferably within the range of 1300 to 1700 °C), it is clear from the specification that the particles are deposited on the bait at a temperature at below 1200 °C.

Knowing the minimum deposition temperature, one skilled in the art would then know that **initially** the deposition surface (“bait”) temperature would be below the consolidation temperature (or else the particles would consolidate). One skilled in the art would also know and understand (after reading the specification at page 4, lines 15-24, and reviewing Figures 1 and 2) that as the soot is deposited the bait is moved or translated away from the burners. This is done in part to maintain the deposition temperature at below the consolidation temperature in the area where the “newly

formed soot” is being deposited as well as to give the preform shape (columnar in this case). One skilled in the art would be able to determine the appropriate distance between the burners so that the temperature of the bait (or that of the preform at the soot deposition site) is below the minimum consolidations temperature. Common instruments such optical pyrometers could be used to make the temperature measurement.

Second, regarding claim 20, Appellants also refer to the Specification on page 5, lines 16-18, which indicates that consolidation temperatures are “typically in the range of 1200 to 1900 °C.” A preferred consolidation temperature range is 1300 to 1700 °C. Using this information, those skilled in the art would understand that 1200 °C would be the minimum consolidation temperature and that as a result the soot particles would be collected to make the preform at a temperature of less than 1200 °C.

Third, claim 21 states that the temperature at which the particles are deposited is approximately 200 to 500 °C less than the minimum temperature. Applying this range to the 1200 °C temperature of the 1200 to 1900 °C range, one gets a deposition temperature range of 700 to 1000 °C, which is below the minimum concolidation temperature of 1200 °C. If applied to the 1300 °C temperature of the 1300 to 1700 °C, one gets a deposition temperature range of 800 to 1100 °C, which is alsobelow the minimum concolidation temperature of 1200 °C. Thus, in either case the temperature for deposition is below the minimum temperature required for consolidation.

Appeal Brief
January 25, 2008
Application No. 09/844,947

CONCLUSION

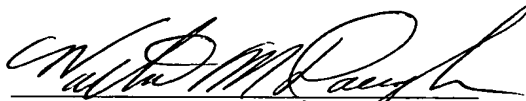
In conclusion, Appellants request a reversal of each of the grounds of rejection maintained by the Examiner. Appellants have shown above by citation of page(s) and line(s) of the specification and reference to the Figures that each item complained of by the Examiner is present in the application as-filed.

Please charge the necessary fees of \$540 for filing the Brief on Appeal to our Deposit Account No. 03-3325. If there are any other fees due in connection with the filing of this Brief on Appeal, for example, an extension of time to make this brief timely, please charge the fee(s) to our Deposit Account No. 03-3325.

Respectfully submitted,

Dated: 25 January 2008

By:



Walter M. Douglas
Registration No. 34,510
607-974-2431
Corning Incorporated
Patent Department
SP-TI-03-01
Corning, NY 14831

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, No. EM087162582US, in an envelope addressed to Mail Stop Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on January 25, 2008.

Date of Deposit


Julie Henshaw

APPENDICES TO BRIEF ON APPEAL

VIII. CLAIMS APPENDIX

The claims on appeal are as follows.

1. **(rejected)** A method for producing a fused silica glass containing titania, comprising:

synthesizing particles of silica and titania by delivering a mixture of silica precursor and a titania precursor to a burner;

growing a column of solid porous preform by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate into dense glass while successively translating the deposition surface away from the burner; and

subsequently consolidating the porous preform into dense glass.

2. **(rejected)** The method of claim 1, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.

3. **(previously cancelled)**

4. **(rejected)** The method of claim 1, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.

5. **(rejected)** The method of claim 1, further comprising dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation.

6. **(rejected)** The method of claim 5, where in the heated, halide-containing atmosphere comprises chlorine.

7. **(rejected)** The method of claim 5, where in the heated, halide-containing atmosphere comprises fluorine.

8. **(rejected)** The method of claim 5, wherein the temperature of the heated, halide-containing atmosphere is in a range from 900 to 1100°C.

9. **(rejected)** The method of claim 1, wherein the glass contains 2 to 12% by weight titania.

10-12. **(previously cancelled)**

13. **(rejected)** The method of claim 5, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.

14. **(previously cancelled)**

15. **(rejected)** The method of claim 5, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.

16-19. **(previously withdrawn)**

20. **(rejected)** The method of claim 1, wherein the minimum temperature is approximately 1200°C.

21. **(rejected)** The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.

22. **(previously cancelled)**

23. **(rejected and rejection is not contested)** The method of claim 1, wherein a variation on coefficient of thermal expansion of the dense glass is in a range from -5 ppb/°C to +5 ppb/°C.

24. **(rejected)** The method of claim 1, further comprising rotating the deposition surface relative to the burner while successively depositing the particles on the deposition surface.

IX. EVIDENCE APPENDIX

A. Evidence

The following are submitted as part of the Evidence Appendix.

1. Final Office Action mailed March 12, 2007, pages 36-43 of this document.
2. Applicants' Response of May 23, 2007, pages 44-52 of this document.
3. Applicants' Response of December 21, 2006, pages 53-60 of this document.

B. Location of Evidence

The Patent Evidence cited above in **Section IX A** is attached hereto as the pages noted above. Additionally the Evidence is contained in the Patent Office's File Wrapper for this application. It constitutes an Office Action sent by the Examiner to applicants during prosecution and applicants' Responses to office Actions.

Case Law

1. Moba B.V. v. Diamond Automation Inc., 66 USPQ2d 1429 (Fed. Cir. 2003), pages 61-70.
2. Verve LLV v. Crane Cam Inc., 65 USPQ2d 1051 (Fed. Cir. 2002), pages 71-73

Appeal Brief
January 25, 2008
Application No. 09/844,947

1. Final Office Action mailed March 12, 2007, pages 36-42 below.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,947	04/27/2001	Bradford G. Ackerman	SP01-095	1336
22928 7590 03/12/2007 CORNING INCORPORATED SP-TI-3-1 CORNING, NY 14831			EXAMINER HOFFMANN, JOHN M.	
RECEIVED MAR 12 2007 IP DEPARTMENT			ART UNIT	PAPER NUMBER
			1731	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
30 DAYS		03/12/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

MAR 13 2007 dm
Final Rejection 5/12/07
Notice of Appeal 6/12/07
6 Month Final Date 9/12/07

Office Action Summary	Application No. 09/844,947	Applicant(s) ACKERMAN ET AL	
	Examiner John Hoffmann	Art Unit 1731	
	<small>— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —</small>		

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 21 December 2006.

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1, 2, 4-9, 13, 15, 20, 21, 23 and 24 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-2, 4-9, 13, 15, 20-21, 23-24 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____
--	--

U.S. Patent and Trademark Office Office Action Summary Part of Paper No./Mail Date 20061211
PTOL-326 (Rev. 7-05)

Application/Control Number: 09/844,947
Art Unit: 1731

Page 2

/ DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

5 The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-2, 4-9, 13, 15, 20-21, 23-24 are rejected under 35 U.S.C. 112, first

paragraph, as failing to comply with the written description requirement. The claim(s)

10 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

13 Examiner could find no support for the claimed "column of solid porous preform", or "solid porous", "while successively translating", "a deposition surface at a temperature
15 below a minimum temperature at which the particles can consolidate" – either explicit or implicit. This is deemed to be a prima facie showing on failure to comply with the requirement. The burden is now on Applicant to show the requirement is complied with, or to amend the claims so that they comply.

Moreover, it is clear that at least the temperature limitation and "while
20 successively translating" cannot be implicitly supported – because they are impossible. The terms "while" and "successively" are two mutually exclusive conditions: 'while' means simultaneously, and "successively" means following each other. Nor can a translating be successive with itself – at best it would have to be successive with some

Application/Control Number: 09/844,947
Art Unit: 1731

Page 3

other translating. But there is NO support for two successive translations (that Examiner can find) – Applicant cannot now claim two successive translations when the specification does not provide support therefor. As to the temperature limitation, the particles could not stick to the support or to each other if the temperature is as low as claimed. In other words, Applicant is correct in arguing that Blackwell does not meet the temperature limitation – but for the same reason, Applicant's invention does not provide support therefor.

Either something is solid or it is porous, it cannot be "solid porous" – or if it could possibly be, there would have to be support for such in the specification. The only mention of "solid" in the specification that Examiner could find is in reference to dense, non-porous glass.

There is no support for claims 20-21. Applicant does not dispute this, thus it deemed that applicant acquiesces on this point.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

15 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 4-9, 13, 15, 20-21, 23-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has not disputed this rejection, thus it deemed that applicant
20 acquiesces that the claims fail to particularly point out and distinctly claim the subject matter.

Application/Control Number: 09/844,947
Art Unit: 1731

Page 4

6 Claim 1: It is not understood what is meant by "column of solid porous preform" – is unclear if it means "column of solid glass or a porous preform", or "a porous column of solid preforms" or something else. As alluded to above, the term "solid porous" is indefinite as to its meaning. And, it is unclear what is meant by "while successively" –
5 since these two words connote mutually exclusive conditions (see above).

Claim 5: It is unclear if the "consolidation" refers to the consolidating step of claim 1, or if it is open to any consolidation.

Claim 21: There is noted that there is no antecedent basis for "the temperature at which the particles are deposited" – thus it is unclear if the claim is directed to the actual
10 deposition temperature, or if it is directed to the temperature of the deposition surface.

Response to Arguments

Applicant's arguments filed 21 December 2006 have been fully considered but they are not persuasive.

Regarding the 112 –first paragraph rejection of "column of solid porous preform", applicant points to specific lines in pages 2-5 of the specification. Whereas these lines do support a limitation of making a "porous column", a "columnar porous preform" or a "porous preform" and then converting it into a "solid preform" or a "solid column", such does not support the newly created limitation of "column of solid porous preform" – as far as examiner can tell. Nor does applicant point out how these lines support this new limitation.

Application/Control Number: 09/844,947
Art Unit: 1731

Page 5

Applicant goes on to point out that since particles are made of solids, the result is a solid preform. This is an assertion that is prima facie unreasonable. Examiner can find no definition for "solid" that means composed of solids. By applicant's reasoning, one can consider a slurry as being a solid, because it too is comprised of solid particles. Since applicant has not defined or otherwise set forth in the as-filed application that "solid" is to mean anything else but is customary usage, the claim is interpreted using the customary definition.

As pointed out previously, the present specification only uses the term "solid" in reference to dense, non-porous glass. Since applicant does not dispute this finding by the Office.

Regarding the "while successively translating" rejection, applicant refers to page 2, page 4 and the abstract. Applicant points out that particles are deposited while the surface is rotated and translated. The relevance of this is not understood. The claim does not recite merely "while translating", rather the claim requires "while successively translating". Since applicant has failed to point out the basis for the "successively" portion of the claim, applicant has failed to show that 35 USC 112 --first paragraph is complied with.

Regarding the limitation of a "temperature below a minimum temperature at which the particles can consolidate", applicant points to page 3, lines 8-10 and pages 1-2. A review of the cited passages indicates that invention does not require capturing the soot "at consolidation temperatures". This is deemed to be insufficient because this passage only refers to the temperature of the soot -- it gives no indication of the

Application/Control Number: 09/844,947
Art Unit: 1731

Page 6

temperature of the deposition surface. The limitation which is rejected refers to the temperature of the deposition surface, not the soot particles. Whereas in other situations this might appear to be splitting hairs – such is not case when one reviews the entire prosecution history. Most notably, at pages 5-6 of the Appeal Brief of 4/12/2006 applicant argues that the substantially identical process of Blackwell has temperatures at which (partial) consolidation takes place. Thus it is deemed that if Blackwell has consolidation, so do's applicant. The plain meaning of "consolidate" is "to join together into one whole"; Since applicant clearly consolidates the particles, there must be something at a temperature which is not below the minimum temperature which permits consolidation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Application/Control Number: 09/844,947
Art Unit: 1731

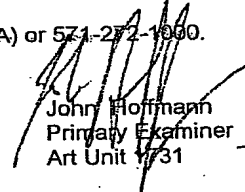
Page 7

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John Hoffmann
Primary Examiner
Art Unit 1731

3-7-07

jmh

2. Applicants' Response of May 23, 2007, pages 42-51.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/844,947
Applicant : Bradford G. Ackerman
Filed : April 27, 2001
Title : METHOD FOR PRODUCING TITANIA-DOPED FUSED SILICA
GLASS
TC/A.U. : 1731
Examiner : John M. Hoffmann
Docket No. : SP01-095

Mail Stop: Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office action of March 12, 2007, please amend the above-identified as follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

Amendments to the Specification

Please amend the Specification on page 3, lines 2-13 as follows (insertions underlines, deletions struck through):

Embodiments of the invention provide a method for producing SiO₂-TiO₂ glass substrates with low variations in CTE within the substrate. The method involves transporting silica and titania precursors in vapor form to deposition burners. The precursors exit the deposition burners where they react to form fine SiO₂-TiO₂ particles ("soot"). The soot collects on a deposition surface to form a porous preform. The method further includes consolidating the porous preform to give a dense SiO₂-TiO₂ glass in a separate step. Consolidating the glass in a separate step eliminates the need to capture the soot at consolidation temperatures. This allows the soot to be deposited at lower temperatures (typically, 200°C to 500°C lower) than possible with the conventional boule process. That is, the silica and titania particles are deposited at a temperature below that required to consolidate the porous perform into dense glass. SiO₂-TiO₂ glass having low OH content can be produced by exposing the preform to a dehydrating agent, such as chlorine or fluorine, prior to consolidation. Chlorine and/or fluorine treatment would also remove impurities from the glass which could result in seeds.

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (amended) A method for producing a fused silica glass containing titania, comprising:
 synthesizing particles of silica and titania by delivering a mixture of silica precursor and a titania precursor to a burner;
 growing a ~~column of solid~~ columnar porous preform by successively depositing the particles of silica and titania on a deposition surface at a temperature below a ~~minimum temperature at which the particles can consolidate~~ that temperature required to consolidate the porous preform into dense glass while ~~successively~~ translating the deposition surface away from the burner; and
 subsequently consolidating the porous preform into dense glass.
2. (previously presented) The method of claim 1, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.
3. (cancelled)
4. (previously presented) The method of claim 1, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.
5. (original) The method of claim 1, further comprising dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

6. (original) The method of claim 5, where in the heated, halide-containing atmosphere comprises chlorine.

7. (original) The method of claim 5, where in the heated, halide-containing atmosphere comprises fluorine.

8. (original) The method of claim 5, wherein the temperature of the heated, halide-containing atmosphere is in a range from 900 to 1100°C.

9. (original) The method of claim 1, wherein the glass contains 2 to 12% by weight titania.

10. – 12 (previously cancelled)

13. (previously presented) The method of claim 5, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.

14. (previously cancelled)

15. (previously presented) The method of claim 5, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.

16. – 19. (previously cancelled)

20. (previously presented) The method of claim 1, wherein the minimum temperature is approximately 1200°C.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

21. (previously presented) The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.

22. (cancelled)

23. (previously presented) The method of claim 1, wherein a variation on coefficient of thermal expansion of the dense glass is in a range from -5 ppb/°C to +5 ppb/°C.

24. (previously presented) The method of claim 1, further comprising rotating the deposition surface relative to the burner while successively depositing the particles on the deposition surface.

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

REMARKS/ARGUMENTS

1. Oath/Declaration

Acknowledgement has not been made as to the acceptance of the Declaration filed December 21, 2006.

2. Drawings

Applicants thank the Examiner for indicating in the form PTO-948 dated May 13, 2004 that the formal drawings previously submitted have been approved.

3. Specification

The specification has been amended by incorporation of the language of original claim 13 into the paragraph on page 3, lines 2-13. Since this language appeared in the claims of the specification as-filed, applicants submit that this amendment does not introduce new subject matter into the specification.

3. Claims

Claims 1, 2, 4, 9, 13, 15, 20, 21, 23 and 24 remain in the application. The independent claim is claim 1. Claims 2, 4, 9, 13, 15, 20, 21, 23 and 24 depend on claim 1 either directly or indirectly by means of an intervening dependent claim.

Claim 1, line 7, has been amended herein to read "~~a column of solid columnar~~ porous preform" as described in the Specification on page 5, lines 5-6; and has been further amended by deletion of the word 'successively' from the phrase "~~successively~~ translating". Claim 1 has further been amended as follows (insertions underlined, deletions struck through)

"... depositing the particles of silica and titania on a deposition surface at a temperature below ~~a minimum temperature at which the particles can consolidate~~ that temperature required to consolidate the porous preform into dense glass ..."

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

Applicants believe that the foregoing amendments overcome the Examiner's rejection described below regarding the use of the word 'while' and "successively" following one another. Further, there is

3. § 112 Rejections

The Examiner has rejected claims 1, 2, 4 - 9, 13, 15, 20, 21, 23, and 24 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirements for reasons set forth in the Office Action.

Regarding the Examiner's rejection of the phrases "a column of solid porous perform" and "successively translating," applicants submit that these rejections are moot in view of the amendments submitted herein (insertions underlined, deletions struck through) so that these phrases read "a ~~column of solid~~ columnar porous perform" and "~~successively~~ translating," respectively. [See further comments in the second paragraph below.]

Regarding the Examiner's rejection of the phrase "a deposition surface at a temperature below a minimum temperature at which the particles can consolidate," this amendment is believed moot in view of the amendment to claim 1 and the specification, both of which use the language of original claim 13 in the application as-filed.

Regarding the Examiner statements concerning use of "while" and "successively" together, applicants submit that this rejection is not moot in view of the amendment described above in which the word "successively" was deleted. Using Figure 1 and the specification at page 4, lines 15-24, and page 5, lines 1-13, it is clear to one skilled in the art that during the deposition process the bait 34 on spindle 36 are "translated" or moved upward.

Finally, the Examiner states that the particles could not stick together if the temperature were as low as applicants' claims. This is interpreted as saying that the particles would not stick together at temperatures below consolidation temperatures. However, This is exactly what applicants' specification teaches; namely, that one can form a preform at temperatures below consolidation temperatures. Applicants refer the Examiner to the specification at page 3, lines 8-9 in which applicants state:

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

Consolidating the glass in a separate step eliminates the need to capture the soot at consolidation temperatures.”

The Examiner also states that something that not be both “solid porous.” The Examiner is in error with this statement. Molecular sieves are a well known “solid porous” materials. Applicants submit that these grounds for rejection should properly be dismissed.

The Examiner also states that applicant has acquiesced that there is no support for claims 20 and 21. Applicants traverses. Claims 20 and 21 are as follows.

20. (previously presented) The method of claim 1, wherein the minimum temperature is approximately 1200°C.

21. (previously presented) The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.

Regarding claim 20, applicants refer the Examiner to the Specification on page 5, lines 16-18, in which applicants indicate that consolidation temperatures are “typically in the range of 1200 to 1900 °C.” The lower temperature is 1200 °C. Those skilled in the art would understand that 1200 °C would be the minimum consolidation temperature. Applicants also refer the Examiner to page 3, lines 5-7 which indicate (1) that performing consolidation in a separate step allow eliminates the need to capture soot at consolidation temperatures and (2) that this allows the soot to be deposited at lower temperatures, typically 200 to 500 °C lower than in conventional boule processes. Applicants submit that the specification supports both claims 20 and 21 and that one skilled in the art would understand this and would understand exactly what these claims mean.

THEREFORE, in view of the foregoing amendments and the comments offered herein, applicants submit that the foregoing 35 U.S.C. § 112, first paragraph, rejection of claims 1, 2, 4-9, 13, 15, 20, 21, 23, and 24, as they may have been amended herein for clarity, may properly be withdrawn.

The Examiner has rejected claims 1, 2, 4 – 9, 13, 15, 20, 21, 23, and 24 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: 23 May 2007
Reply to Office Action of: March 12, 2007

and distinctly claim the subject matter with applicants regards as the invention.

Applicants traverse the rejection.

Applicants submit that the rejections given under 35 U.S.C. § 112, second paragraph, are moot in view of the amendments made to the specification, for clarity, and the arguments given above which are incorporated herein in their entirety.

4. Conclusion

Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims and a prompt Notice of Allowance thereon

Applicants hereby respectfully request that in the event that an extension of time is required to make this response timely, that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Walter M. Douglas at 607-974-2431.

23 May 2007
Date

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. § 1.8	
I hereby certify that this paper and any papers referred to herein are being transmitted by facsimile to the U.S. Patent and Trademark Office at 571-273-8300 on:	
<u>23 May 2007</u> Date	
<u>Walter M. Douglas</u> Walter M. Douglas	<u>23 May 2007</u> Date

Respectfully submitted,
CORNING INCORPORATED

Walter M. Douglas
Walter M. Douglas
Registration No. 34,510
Corning Incorporated
Patent Department
Mail Stop SP-TI-03-1
Corning, NY 14831

3. Applicants' Response of December 21, 2006, pages 52-58.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

See # Below

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/844,947
Applicant : Bradford G. Ackerman et al.
Filed : April 27, 2001
Title : METHOD FOR PRODUCING TITANIA-DOPED FUSED
SILICA GLASS

TC/A.U. : 1731
Examiner : Peter Chin

Docket No. : SP01- 095

Mail Stop: Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office Action of December 14, 2006 and the Office Action mailed June 6, 2006, originally responded to by mail on October 25, 2006 with a two (2) month extension of time to make the response timely.

Please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

Amendments to the specification

On page 2, after the paragraph ending at line 22, please insert the following
paragraph:

In another aspect the method of the invention is directed to synthesizing particles of silica and titania by delivering a mixture of a silica precursor and a titania precursor to a burner, growing a porous preform by successively depositing the particles on a deposition surface (herein also called a "bait") while rotating and translating the deposition surface relative to the burner, consolidating the porous preform into a partially dense glass.

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for producing a fused silica glass containing titania, comprising:
 - synthesizing particles of silica and titania by delivering a mixture of silica precursor and a titania precursor to a burner;
 - growing a column of solid porous preform by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate ~~either partially or fully~~ into dense glass while successively translating the deposition surface away from the burner; and
 - subsequently consolidating the porous preform into dense glass.
2. (previously presented) The method of claim 1, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.
3. (cancelled)
4. (previously presented) The method of claim 1, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.
5. (original) The method of claim 1, further comprising dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation.
6. (original) The method of claim 5, where in the heated, halide-containing atmosphere comprises chlorine.
7. (original) The method of claim 5, where in the heated, halide-containing atmosphere comprises fluorine.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

8. (original) The method of claim 5, wherein the temperature of the heated, halide-containing atmosphere is in a range from 900 to 1100°C.
9. (original) The method of claim 1, wherein the glass contains 2 to 12% by weight titania.
10. – 12 (previously cancelled)
13. (previously presented) The method of claim 5, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.
14. (previously cancelled)
15. (previously presented) The method of claim 5, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.
16. – 19. (previously cancelled)
20. (previously presented) The method of claim 1, wherein the minimum temperature is approximately 1200°C.
21. (previously presented) The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.
22. (cancelled)
23. (previously presented) The method of claim 1, wherein a variation on coefficient of thermal expansion of the dense glass is in a range from -5 ppb/°C to +5 ppb/°C.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

24. (previously presented) The method of claim 1, further comprising rotating the deposition surface relative to the burner while successively depositing the particles on the deposition surface.

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

REMARKS

1. Claims

Claims 1, 2, 4-9, 13, 15, 20, 21, 23 and 24 remain in this application. Claim 1 has been amended herein. Claim 1 is the only independent claim in the application. Claims 2, 4-9, 13, 15, 20, 21, 23 and 24 depend from claims 1 either directly or indirectly.

Claim 1 has been amended by deleting the phrase "either partially or fully" so that the claim now reads "... can consolidate ~~either partially or fully~~ into dense glass ...". While the specification does indicate that in the present invention the deposition temperatures are 200 - 500 °C lower than conventional processes which require the particles (soot) to be deposited at consolidation temperatures. [See page 3, lines 8-10.]

Applicants believe that the foregoing amendment does not introduce new matter into the specification.

2. 35 U.S.C. §112 rejection

Claims 1, 2, 4-9, 13, 15, 20, 21, 23 and 24 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states that he could:

"find no support for the claimed [1] "column of solid porous perform"
(or any other column), or [2] "solid porous", [3] "while successively
translating", [4] "a deposition surface at a temperature below a
minimum temperature at which the particles can consolidate either
partially or fully into dense glass: - either explicit or implicit. This is
deemed to be a prima facie showing on [sic] failure to comply with the
requirement. The burden is now on Applicant to show the requirement
is complied with, or to amend the claims so that they comply."
{Numerals added.]

Applicants submit the following to show that the claims are fully supported by the specification.

1. Regarding [1], the phrase complained of is fully supported by the specification; for example, at on page 2, lines 18-22; page 3, lines 5-6 and 20-21; page 4, lines 15-19; page 5, lines 3-8; the Abstract; and Figure 1. Page 2, lines 18-22 describes synthesizing particles ("soot", see page 3, line 5) by delivering a silica precursor and a

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

titania precursor to burner and growing a porous perform by depositing the particles a on a deposition surface while rotating and translating the deposition surface relative to the burner. Particles are solids. Consequently, the perform that is formed is a solid perform. Combining these lines with Figure 1, particularly elements 34 and 40, and the specification on page 4, lines 15-19, it is clear that the preform can be formed on the "bait" (a term of art that describes a deposition surface) and that the perform can be formed in the form of a column. The column will be formed as one continues to raise spindle 36 while depositing the particle on perform 40 as it grows (see page 5, lines 7-8). In view of the foregoing, applicants submit that all the term of [1] that is complained of have been fully set forth in the specification.

2. Regarding [2], see [1] above. Particles are solids and the particles are used to form the 'porous perform.' Hence, implicitly the porous perform form by particles is a solid preform.
3. Regarding [3], the phrase complained of fully supported by the specification on page 2, lines 18-22; page 4, lines 15-24 and the Abstract. These lines clearly indicate that particles (which are solids) are deposited to form a porous perform while the deposition surface (the bait)is being rotated and translated. In view of the foregoing, applicants submit that all the terms of [2] that are complained of have been fully set forth in the specification.
4. Regarding [4], claim 1 has been amended to remove the phrase "~~... either partially or fully. . .~~" as described above in Section 1 of these remarks. With regard to the remainder of the phrase complained of, please refer to the specification on page 3, lines 8-10, and also page 1, line 28, to page 2, line 7. The latter refers to "conventional processes" in which the soot (particles) is captured at consolidation temperatures, a process which leads to problems such as variations in composition which in turn lead to non-uniform thermal expansion properties. In contrast, the invention as described on page 3, lines 8-10, clearly indicates that the present invention eliminates the need to capture soot at consolidation temperatures. The present invention allows one to capture soot at temperatures 200-500 °C lower than the conventional process.

Appeal Brief
January 25, 2008
Application No. 09/844,947

Appl. No.: 09/844,947
Amdt. Dated: October 25, 2006
Reply to Office Action of: June 6, 2006

Applicants respectfully submit that in view of the foregoing facts and arguments, the invention as now claimed is fully described in the specification. Consequently, applicants respectfully submit that it is proper for the Examiner to withdraw the §112, first paragraph, rejection of claims 1, 2, 4-9, 13, 15, 20, 21, 23 and 24.

3. Oath/Declaration

The Examiner has indicated that the oath/declaration is defective because it did not identify the application by number and filing date. A new oath/declaration is enclosed with this paper.

4. Conclusion

Applicants respectfully submit that all items listed in the Office Actions have been treated herein, and that the pending claims are now in condition for allowance. If there are further items whose speedy resolution would facilitate prosecution and allowance, applicants' undersigned attorney respectfully requests that the Examiner call him so that the items can be discussed and if possible suitable amendments entered into the case by Examiner's amendment.

Applicant believes that a two (2) month extension of time is necessary to make this Reply timely. Applicants respectfully request that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Walter M. Douglas at (607) 974-2431.

21 December 2006
Date

<p>CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. § 1.8</p> <p>I hereby certify that this paper and any papers referred to herein are being transmitted by facsimile to the U.S. Patent and Trademark Office at 703-872-9306 on:</p> <p><u>21 December 2006</u> Date</p> <p><u>Walter M. Douglas</u> Walter M. Douglas Date</p>
--

Respectfully submitted,
CORNING INCORPORATED

Walter M. Douglas 21 Dec 2006
Walter M. Douglas
Registration No. 34,510
Corning Incorporated
Patent Department
Mail Stop SP-TI-03-1
Corning, NY 14831

Moba B.V. v. Diamond Automation Inc., 66 USPQ2d 1429 (Fed. Cir. 2003), pages

61-70

1428

Lexmark Int'l Inc. v. Static Control Components Inc.

66 USPQ2d

reparable injury because the damages flowing from such losses are difficult to compute." 104. Lexmark's potential damages are difficult to measure or quantify, and thus Lexmark will likely suffer irreparable injury absent an injunction against SCC.

V. THE PUBLIC INTEREST FACTOR FAVORS LEXMARK

105. In copyright infringement cases, as with the irreparable harm factor, it is ordinarily presumed that an injunction will serve the public interest if the copyright holder shows a likelihood of success on the merits. *Concrete Mach.*, 843 F.2d at 612. Further, "it is virtually axiomatic that the public interest can only be served by upholding copyright protections and, correspondingly, preventing the misappropriation of the skills, creative energies, and resources which are invested in the protected work." *Franklin Computer*, 714 F.2d at 1254. Moreover, a preliminary injunction is necessary "to preserve the integrity of the copyright laws which seek to encourage individual effort and creativity by granting valuable enforcement rights." *Aiori*, 672 F.2d at 620.

106. SCC contends that policies of the United States government favor the recycling and remanufacturing of toner cartridges and further claims that "an injunction would threaten significant and truly irreparable harm to the environment." SCC Opp. at p. 30. This argument rests primarily upon the assumption that the majority of Lexmark's Prebate toner cartridges will end up in landfill should be the Court enjoin SCC from trafficking in its SMARTER microchips. The Court finds this claim to be largely unsubstantiated. Lexmark, in fact, has an extensive remanufacturing program for all of its used Prebate cartridges. Accordingly, the Court does not accept SCC's argument that an injunction will threaten significant environmental degradation.

107. SCC contends that public policy favors competition and supports the availability of multiple remanufacturers for toner cartridges. SCC further contends that public policy opposes the use of technological measures to prevent or limit remanufacturing. The Court has no trouble accepting SCC's claim that public policy generally favors competition. The Court finds, however, that this general principle only favors legitimate competition. Public policy certainly does not support

1429

Lexmark Int'l Inc. v. Static Control Components Inc.

66 USPQ2d

copyright infringement and violations of the DMCA in the name of competition.

VI. THE POSSIBILITY OF SUBSTANTIAL HARM TO OTHERS

A. SCC

108. "Advantages built [only] deliberately [copyright software] do not... give [SCC] standing to complain that [its] vested interests will be disturbed." *Aiori*, 672 F.2d at 620. One cannot build a business based upon infringing another's intellectual property rights, and then be allowed to complain that making them stop will cause harm. *See Candence*, 125 F.3d at 829 (the district court erred by giving improper emphasis to harm to defendant that would devastate its business: "a defendant who knowingly infringes another's copyright cannot complain of the harm that will befall it when property forced to desist from its infringing activities."); *Franklin Computer*, 714 F.2d at 1255 (reversing district court's denial of a preliminary injunction because of its "devaluing effect" on the defendant's business: "[i]f [the effect on the defendant] were the correct standard, then a knowing infringer would be permitted to construct its business around its infringement, a result we cannot condone.").

109. SCC intentionally copied Lexmark's Toner Loading Programs and purposely developed and sold a product that circumvents the access control measure that protects Lexmark's copyrighted works. Thus, under the circumstances, the "Court should not consider a balancing of hardships as a determining factor in granting injunctive relief in a copyright matter" because "allowing for a balancing of hardships would permit a knowing infringer to construct its entire business around infringement." *Value Group Inc. v. Meridian Lake Estates, L.P.*, 800 F.Supp. 1228, 1235 [24 USPQ2d 1531] (D.N.J. 1992) (citing *Franklin Computer*, 714 F.2d at 1255). In any event, the Court finds that the harm that Lexmark would likely suffer absent an injunction outweighs the harm that SCC would likely suffer because of the injunction.

B. Third Parties

110. As has been stated by SCC and various amici, the issuance of an injunction in the instant case could have a significant impact upon the toner cartridge remanufacturing in-

1430

Moba B.V. v. Diamond Automation Inc.

66 USPQ2d

industry and some impact upon the remanufacturing industries as a whole. SCC and the various amici, however, have provided little evidentiary support for these claims and any possible impact that an injunction in the instant case would have on others in the remanufacturing industry appears to be almost entirely speculative.

111. SCC also contends that the issuance of an injunction in the instant case would have a negative impact upon consumers because they will not have the opportunity to have their Prebate cartridges refilled or remanufactured by third parties. While this may be the case, the Court feels little sympathy for consumers that accept the up-front discount when purchasing Prebate cartridges and are subsequently required to comply with the Prebate agreement and return the used cartridges to Lexmark.

VII. LEGAL CONCLUSION

112. Lexmark is likely to prevail on the merits of its copyright infringement and DMCA claims. It is presumed that Lexmark will suffer irreparable harm in the absence of an injunction, and SCC has failed to rebut this presumption. Even in the absence of this presumption, Lexmark has shown that it will suffer irreparable harm. It is further presumed that the public interest favors granting the injunction, and SCC has failed to rebut this presumption. Even in the absence of this presumption, it is clear that the public interest favors discouraging copyright infringement and violations of the DMCA. SCC contends that certain third parties could be harmed should the Court issue an injunction, but the Court finds these claims to be unavailing. The Court has fully considered the four preliminary injunction factors, and, on balance, it is clear that injunctive relief is appropriate in the instant case.

CONCLUSION

For the reasons stated above, Lexmark's Motion for a Preliminary Injunction shall be granted by Order of this Court, contemporaneously entered in accordance with these Findings of Fact and Conclusions of Law. In announcing this decision, the Court has adopted a majority of Lexmark's Proposed Findings of Fact and Conclusions. The Court has, however, conducted an exhaustive independent review of this matter and has made changes to

1431

Moba B.V. v. Diamond Automation Inc.

66 USPQ2d

Lexmark's Proposed Findings of Fact and Conclusions of Law where appropriate.

ORDER

In accordance with the Findings of Fact and Conclusions of Law entered on the same date herewith, IT IS HEREBY ORDERED that:

(1) Lexmark International, Inc.'s ("Lexmark") motion for a preliminary injunction is GRANTED;

(2) Static Control Components, Inc. ("SCC") shall cease making, selling, distributing, offering for sale or otherwise trafficking in the "SMARTER" microchips for the Lexmark T320/522 and T620/622 toner cartridges, until further Order from this Court; and

(3) the bond previously posted by Lexmark shall remain in effect until further Order from this Court.

Moba B.V. v. Diamond Automation Inc.
U.S. Court of Appeals
Federal Circuit
Nos. 01-1063, -1083
Decided April 1, 2003

PATENTS
(1) Patent construction — Claims — Broad or narrow (§ 125.1303)
Patent construction — Claims — Defining terms (§ 125.1305)

JUDICIAL PRACTICE AND PROCEDURE
Procedure — Jury trials (§ 410.42)
Federal district court improperly allowed jury to import additional limitation into court's claim construction in upholding jury's conclusion that "guiding steps" recited in claim of patent for egg sorting method must be performed sequentially, since court found that jury reasonably could have determined from testimony that sequential performance is necessary characteristic of "guiding steps" limitation, whereas claim construction is matter of law, and court's instructions to jury regarding "guiding steps" did not require sequential performance; patentees did not waive

1431

Moba B.V. v. Diamond Automation Inc.

66 USFQ24

judgment of patent invalidity and noninfringement, in which defendant counterclaimed for declaratory judgment of validity and infringement. Defendant appeals from jury verdict of noninfringement, and from denial of its motion for judgment of infringement as matter of law, and plaintiffs cross-appeal from judgment that asserted patent claims are not invalid. Affirmed in part, reversed in part, and remanded. Rader, J., concurring in separate opinion; Bryson, J., concurring in separate opinion.

Jon A. Baugman, Erik N. Vidlock, and Nicole D. Oall, of Pepper Hamilton, Philadelphia, Pa.; Marvin Perry and Linda R. Potente, for Larson & Taylor, Alexandria, Va., for plaintiffs/cross-appellants. Albert J. Brenneken, John W. Bateman, and Sheila Morazavi, of Kenyon & Kenyon, New York, N.Y., for defendant-appellant.

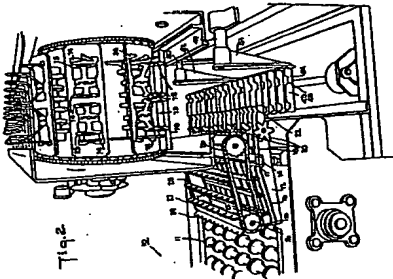
Before Rader, Schall, and Bryson, circuit judges.

Per curiam.

At trial, a jury in the United States District Court for the Eastern District of Pennsylvania found that Moba, B.V., Staikatz, B.V., and FPS Food Processing Systems, Inc. (collectively FPS) did not infringe patents assigned to Diamond Automation, Inc. (Diamond). See *Moba, B.V. v. Diamond Automation, Inc.*, No. 95-CV-2631, 2000 U.S. Dist. LEXIS 15483, at *43 (E.D. Pa. Sept. 29, 2000). In response to a motion for judgment as a matter of law that substantial evidence supports the jury's verdict that machines sold by FPS and used by its customers do not practice the method of United States Patent No. 4,519,494 (494 patent). However, no reasonable jury could find that machines sold by FPS and used by its customers do not practice the method of United States Patent No. 4,519,505 (505 patent). Thus, this court affirms-in-part, reverses-in-part, and remands for a determination of damages.

I.

Diamond is a Michigan corporation that manufactures and sells high-speed egg processing machines to sort batches of eggs into different categories by weight and quality. Diamond developed these machines during the early 1980s with technology that significantly increased the processing speed for eggs. Diamond obtained various patents covering aspects of that technology, including the 494 and 505 patents, and United States Patent Nos. 4,569,444 (444 patent) and



Claim 24 of the '505 patent corresponds generally to the subject matter of Fig. 2:

24. A method for advancing a plurality of rows of eggs from a candling station through a plurality of weighing stations in an egg grading apparatus comprising:

conveying eggs from said candling station to elongated guide means disposed adjacent to said candling station, continuously advancing said eggs on said guide means through said weighing stations, simultaneously with said step of advancing, weighing said eggs at said weighing stations.

66 USFQ24

Moba B.V. v. Diamond Automation Inc.

"downwardly, and away" from conveyor means, in order "to urge the received eggs downwardly," since, in context of patent, "to urge" should be given its broader meaning of "to cause to move," since accused infringer presented evidence that brush belt in device of accused method does not guide eggs downwardly relative to their initial position upon receipt in brush belt, and since device performs different function, in different way, to obtain different result from language of limitation.

[5] Patentability/Validity — Specification — Written description (§ 115.1103)

Compliance with written description requirement of 35 U.S.C. § 112 does not require particular form of disclosure, provided person of skill in art could determine from specification that inventor possessed invention at time of filing; in present case, patent for egg sorting method need not disclose conveyor lifting system encompassed by asserted claim, since specification describes every element of claim in sufficient detail that one of ordinary skill in art would recognize that inventor possessed invention at time of filing.

[6] Patentability/Validity — Specification — Enablement (§ 115.1105)

Substantial evidence supports finding that claim for egg sorting method is not invalid for lack of enablement, since there is no evidence recounting amount of experimentation person of ordinary skill in art would require to develop conveyor lifting system in view of patent's disclosure, and since inference of unlimited general testimony concerning development of conveyor lifting system taken separate from disclosure of patent.

Particular patents — General and mechanical — Egg sorting

4,519,494, McEvoy and Thomas, egg handling system, judgment of noninfringement affirmed.
4,519,505, Thomas, egg transfer system, judgment of noninfringement reversed.

Appeal from the U.S. District Court for the Eastern District of Pennsylvania, Kaufman, J. Action by Moba B.V., Staikatz, B.V., and FPS Food Processing Systems Inc. against Diamond Automation Inc. for declaratory

1430

its right to argue interpretation of "guiding steps" on appeal, even though it did not object to district court's claim construction or its instructions to jury, since patentee does not seek to alter district court's construction on appeal, and has argued consistently that neither language of claim itself, nor court's order defining that language, requires that "guiding steps" occur separately.

PATENTS

(2) Infringement — Tests (§ 120.09)

Infringement analysis for method claims that examines distinctions between implementing apparatuses is disfavored; in present case, accused infringer's argument for noninfringement of method claim for egg sorting is without merit, since it focuses on distinctions between device that implements accused method and patentee's preferred embodiment for claimed method, and since apparatus of accused method performs all three "guiding steps" recited in claim.

(3) Infringement — Literal Infringement (§ 120.05)

Patent construction — Claims — Defining terms (§ 125.1305)

Patent construction — Claims — Process (§ 125.1309)

Accused egg sorting device meets "holding station" limitation of asserted method claim, even though egg in accused method does not cease motion before being lifted to overhead conveyor, since claims do not require specific temporal limitation associated with term "holding," and ordinary meaning of "to hold" imposes no requirement that object remain stationary, since specification indicates that claimed process holds and moves egg at same time, and since term "holding station" thus does not require lack of motion.

(4) Infringement — Literal Infringement (§ 120.05)

Infringement — Doctrine of equivalents — In general (§ 120.0701)

Patent construction — Claims — Process (§ 125.1309)

Accused egg sorting method does not meet, either literally or under doctrine of equivalents, limitation of asserted method claim that requires rotation of egg receiving means

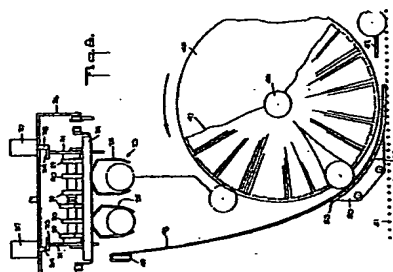
1432 Moba B.V. v. Diamond Automation Inc. 66 USPQ2d 1433

guiding said eggs from said weighing stations first to a plurality of egg holding stations located downstream of said guide means and then to a plurality of locations longitudinally spaced-apart from and substantially horizontally co-planar with said holding stations.

guiding further eggs to said plurality of holding stations, and lifting said eggs simultaneously from said holding stations and said plurality of longitudinally spaced-apart locations.

'505 patent, col. 13, ll. 33-54 (emphasis added).

The "back end" process receives eggs from an overhead conveyor. This conveyor carries the eggs in rows until dropping off each individual egg at a different receiving station based on the information in the computer. At each station, the eggs are either packaged or discarded. Figure 8 of the '494 patent illustrates an embodiment of the invention designed to receive eggs from an overhead conveyor for transport to a packer:



Claim 28 of the '494 patent corresponds generally to the subject matter of Fig. 8. 28. A method of transferring eggs delivered in spaced-apart aligned relationship by a first conveyor means to a receiving station, comprising the steps of,

delivering eggs to said receiving station in parallel spaced apart rows on said first conveyor means,

releasing eggs from said first conveyor means at the receiving station in accordance with a predetermined requirement,

positioning a receiving means below the first conveyor means so as to receive therein and deliver to a common member the eggs released from the parallel spaced-apart rows of the first conveyor means,

receiving said eggs in the receiving means disposed at said receiving station whereby the released eggs from both said parallel spaced apart rows of eggs fall on and are received by said receiving means,

rotating the receiving means downwardly and away from said first conveyor means to urge the received eggs downwardly,

guiding said eggs received in said receiving means downwardly and away from said receiving means, and

conveying said eggs away from said receiving means on second conveyor means,

said step of releasing comprising releasing said eggs successively from said first conveyor means at said receiving station along the length of said receiving means, and said step of conveying comprising conveying said eggs individually in rows away from said receiving means on said second conveyor means.

'494 patent, col. 12, ll. 9-40 (emphasis added).

Moba, B.V., and Staalkat, B.V., are Dutch companies that also manufacture and sell high-speed egg processing machines, such as the Moba Omnia and the Staalkat Selecta. FPS Food Processing, a Pennsylvania corporation, sells Moba's and Staalkat's egg processing machines in the United States. In the United States market, FPS and Diamond are the only significant competitors in the manufacture and sale of high-speed egg processing machines.

In 1994, Diamond filed a patent infringement suit in the United States District Court for the Eastern District of Michigan against FPS. The district court dismissed that case for lack of personal jurisdiction. In 1995, FPS filed suit in the United States District Court for the Eastern District of Pennsylvania seeking a declaratory judgment that the '444, '494,

66 USPQ2d Moba B.V. v. Diamond Automation Inc. 1433

'373, and '505 patents are invalid and not infringed by the Moba Omnia and the Staalkat Selecta. Diamond filed a declaratory judgment counterclaim that the patents are valid and infringed. After discovery, the district court construed the patent claims. Then a jury heard the case from January 28, 2000 to February 25, 2000. On February 22, 2000, before the jury retired to consider its verdict, Diamond moved for entry of JMOL under Rule 50(a) of the Federal Rules of Civil Procedure that FPS infringed and induced infringement of the four patents. In its February 25, 2000 verdict, the jury found that those patents were not invalid and not infringed. On March 6, 2000, the district court denied Diamond's February 22, 2000 JMOL motion, and entered judgment in favor of FPS on the infringement issues. Diamond renewed its motion for JMOL regarding infringement, which the district court again denied.

Diamond argues that claim 24 of the '505 patent and claim 28 of the '494 patent cover methods used in both the Moba Omnia and the Staalkat Selecta. Diamond also contends that FPS has induced its customers to infringe those claims by selling them the Moba Omnia and the Staalkat Selecta and by training them to use those machines. Diamond appeals, therefore, the district court's denial of JMOL on these issues. FPS cross-appeals the jury's determination that claim 24 of the '505 patent and claim 28 of the '494 patent are not invalid. Because Diamond no longer pursues any claims arising from the '444 or '373 patents, or claim 34 of the '494 patent, this court need not address those questions. This court has jurisdiction over the present appeal under 28 U.S.C. § 1295(a)(1) (2000).

II.

This court reviews claim construction without deference. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454, 46 USPQ2d 1169, 1172 (Fed. Cir. 1998) (*en banc*). This court accords substantial deference to a jury's factual application of a claim construction to the accused device in an infringement determination. *Empress, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1348-49, 55 USPQ2d 1161, 1164 (Fed. Cir. 2000).

This court reviews a district court's denial of JMOL without deference, reversing only if substantial evidence does not support a jury's factual findings or if the law cannot support the legal conclusions underpinning the jury's factual findings. *Cybor Corp.*, 138 F.3d at 1454.

"guiding steps"

(1) Based upon its claim construction, the district court instructed the jury, in relevant part, that the guiding steps of claim 24 "are defined as follows: (1) Carrying eggs to hold-

1454. "A district court may overturn a jury's verdict only if upon the record before the jury, reasonable jurors could not have reached that verdict." *JNP Eng'g, Plastics, Inc. v. Miller Weitz Mills, Inc.*, 275 F.3d 1347, 1353, 61 USPQ2d 1193, 1197 (Fed. Cir. 2001).

Claim language defines claim scope. *SRJ Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121, 227 USPQ 577, 586 (Fed. Cir. 1985) (*en banc*). As a general rule, claim language is given the ordinary meaning of the words in the normal usage of the field of the invention. *Toro Co. v. White Concess. Indus.*, 199 F.3d 1293, 1299, 53 USPQ2d 1065, 1067 (Fed. Cir. 1999). Nevertheless, the invention may act as its own lexicographer and use the specification to supply new meanings for terms either explicitly or by implication. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370, 38 USPQ2d 1461 (1996). Thus, to help determine the proper construction of a patent claim, a construing court consults the written description, and, if in evidence, the prosecution history. *Id.* at 979-80.

After claim construction, the fact finder compares the properly construed claim with the allegedly infringing devices. *Keneco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1360, 54 USPQ2d 1308, 1312 (Fed. Cir. 2000). Infringement requires the patentee to show that the accused device contains or performs each limitation of the asserted claim, forms each limitation of the asserted claim, *Mas-Hamilton Group v. LeGard, Inc.*, 156 F.3d 1206, 1211, 48 USPQ2d 1010, 1014-15 (Fed. Cir. 1998), or an equivalent of each limitation not satisfied literally. *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17 (41 USPQ2d 1865) (1997). The sale or manufacture of equipment to perform a claimed method is not direct infringement within the meaning of 35 U.S.C. § 271(b), *Mindenhall v. Cedarapids, Inc.*, 5 F.3d 1557, 1579, 28 USPQ2d 1081, 1100 (Fed. Cir. 1993).

In this case, the record shows that FPS's customers use the method of the Moba Omnia to process eggs in the United States. Hence, to show infringement Diamond needs only to prove that the Moba Omnia performs the method of claim 24 when it processes eggs.

1434

Moba B.V. v. Diamond Automation Inc.

66 USPQ2d

ing stations; (2) Carrying eggs from the holding stations to the spaced apart locations; and (3) Carrying more eggs to the holding stations." At trial, Diamond did not object to either the district court's construction of "guiding steps" or to the jury instructions about that term. Following the jury verdict of non-infringement, the district court denied Diamond's JMOL motion. In its denial, the district court acknowledged that its interpretation of guiding steps let undetermined whether the claim requires sequential performance of the steps. Then the trial court reasoned that the testimony presented that sequential performance is a necessary characteristic of the "guiding steps." The district court's instructions to the jury did not require sequential performance. In essence, the district court allowed the jury to add an additional limitation to the district court's construction of "guiding steps." In this, the district court erred. Claim construction is a question of law and is not the province of the jury. *Markman*, 52 F.3d at 979.

This error takes on significance in this appeal because the jury found that the Moba Omnia does not infringe. The record before us discloses no alternative basis upon which a reasonable jury could find that the Moba Omnia does not infringe, other than that the Moba Omnia does not satisfy the guiding steps limitation. Thus by allowing the jury to import an additional limitation into the claims, the district court fundamentally altered the verdict.

Because Diamond did not object to the district court's claim construction or instructions to the jury, FPS contends that Diamond has waived its right to argue the interpretation of "guiding steps" on appeal. The doctrine of waiver as applied to claim construction prevents a party from offering a new claim construction on appeal. *Interactive Gift Express v. Compuserve Inc.*, 256 F.3d 1323, 1346, 59 USPQ2d 1401, 1418 (Fed. Cir. 2001). Moreover, a party's objection to a jury instruction is waived unless that party objects to the instruction before the jury retires to consider the verdict. Fed. R. Civ. P. 51. In this case, however, waiver does not bar Diamond's argument. Diamond does not now contest the district court's instruction to the jury on the meaning of "guiding steps." Essentially Diamond does not wish to alter the district court's claim construction on appeal, but seeks enforcement of the trial court's claim construction.

66 USPQ2d

Moba B.V. v. Diamond Automation Inc.

1435

In these actions, the Moba Omnia practices all three guiding steps. With a focus on the movement of the eggs (the subject matter of the method claim) in the Moba Omnia, rather than the movement of the Moba Omnia itself, each of these steps is evident. As required by the first guiding step of claim 24, the Moba Omnia moves a first egg to a holding station. The Moba Omnia then moves the first egg to a spaced-apart location, the second guiding step. Simultaneously, the Moba Omnia moves a second egg to the holding station to perform the third guiding step. The first and second eggs are then ready for simultaneous lifting. In sum, the record evidence provides no basis upon which a reasonable jury could find that the Moba Omnia does not perform the three guiding steps of the '505 patent's claim 24.

"holding station"

(3) The district court correctly construed the "holding station" of claim 24 of the '505 patent as "a first location in space to which an egg is moved and at which the egg may maintain position until the egg is lifted simultaneously with an egg at a spaced-apart location." Nonetheless, FPS argues that the district court's construction requires that an egg cease motion before the lift to the overhead conveyor. The claims simply do not require a specific temporal limitation associated with the term "holding." Indeed the specification states that the holding station positions an egg relative to the overhead conveyor for pick-up to the overhead conveyor. See, e.g., '505 patent, col. 2, ll. 44-58, col. 6, ll. 4-8. The specification actually speaks of eggs that are "held" as they move. *Id.* at col. 3, ll. 2-6 ("The disks each include a plurality of peripheral recesses which are disposed in horizontal alignment so as to receive and hold eggs advanced along the guide bars as they are transferred to the holding stations."). Moreover, the ordinary meaning of "to hold" is "to keep in position, guide, control, or manage." *The Oxford English Dictionary* (2d ed. 1989). The meaning also imposes no requirement that an object remain stationary.

Moreover, as this court has repeatedly counseled, the best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention. *Markman*, 52 F.3d at 986. In this instance, the context is the swift and safe movement of eggs. As indicated by the specification, the process holds the eggs at the same time it moves the egg, thus achieving the dual goals of precision and speed. The process may hold and move an

egg at the same time. In sum, the district court correctly construed the term "holding." The term "holding station" also does not require lack of motion.

To show that the Moba Omnia does not infringe claim 24, FPS relies entirely upon evidence that eggs in the Moba Omnia do not stop before they are picked up. As described above, however, the claim does not require a stationary holding station. To satisfy the holding station requirement, the Moba Omnia needs only employ "a first location in space to which an egg is moved and at which the egg may maintain position until the egg is lifted simultaneously with an egg at a spaced-apart location," whether or not eggs stop before the pick up. The record shows that the Moba Omnia employs such a first location. In view of the undisputed record evidence, no reasonable jury could find that the Moba Omnia does not move an egg to a holding station as claimed.

In sum, the evidence of record consistent with the correct claim construction shows that the method performed by the Moba Omnia includes all three "guiding steps" and that the Moba Omnia moves eggs to a "holding station." Because no reasonable jury could find on the record evidence that the method performed by the Moba Omnia does not infringe literally and directly claim 24 of the '505 patent, the district court erred in not granting JMOL on that issue.

B.

Turning to claim 28 of the '494 patent, the parties dispute the district court's construction of the limitation "predetermined sequence" and two limitations containing the phrase "downwardly and away." Because construction of the first "downwardly and away" limitation disposes of the question of infringement, this court need not address the other limitations.

The first "downwardly and away" limitation recites: "rotating the receiving means downwardly and away from said first conveyor means to urge the received eggs downwardly." The district court construed this claim language: "[T]he receiving means must be rotated downwardly (i.e. toward the ground) and be rotated away from the main

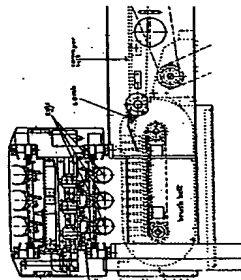
* The district court determined that the language "receiving means" does not invoke § 112, ¶ 6. As the district court's failure to construe this limitation as means-plus-function is not disputed by the parties, this court offers no judgment on the correctness of that determination.

66 USPQ2d

Moba B.V. v. Diamond Automation Inc.

1436

eggs horizontally to a comb mechanism that lifts the eggs from within the bristles of the brush belt. The comb then guides the eggs downward to a second transport conveyor.



At trial, FPS presented substantial evidence that the brush belt of the Skaalkat Selecta does not move the eggs downwardly as required by the literal language of claim 28. FPS also presented substantial evidence to support that the Skaalkat Selecta does not infringe claim 28 under the doctrine of equivalents. For example, Dr. Kirk, an expert witness for FPS, testified that the Selecta's brush belt does not guide eggs downwardly. Rather, the brush guides eggs over a linear path rather than a curved path. As a result, the eggs moved upward rather than downward relative to their initial position upon receipt in the brush belt. This evidence supports the jury's verdict of no infringement. Even applying the doctrine of equivalents, the Skaalkat Selecta performs a different function in a different way to obtain a different result from the language of the claim limitation. Thus, substantial evidence supports the jury's finding that the Skaalkat Selecta's method does not satisfy the first "downwardly and away" limitation of claim 28, either literally or under the doctrine of equivalents. Hence, this court affirms the district court's denial of JMOL. Because the Skaalkat Selecta does not satisfy the first "downwardly and away" limitation, this court need not reach other potential grounds to support the jury's verdict.

III.

The Patent Act imposes indirect infringement liability on a party who actively induces others to directly infringe a patent. 35 U.S.C. § 271(b) (1994). Diamond appeals the district court's denial of its motion for JMOL that FPS indirectly infringes claim 24 of the '505 patent and claim 28 of the '494 patent. In re-

66 USPQ2d

Moba B.V. v. Diamond Automation Inc.

1437

viewing the district court's denial of Diamond's JMOL motion, this court presumes that the jury resolved all factual disputes in favor of the prevailing party and leaves those findings undisputed as long as substantial evidence supports them. *Sibia Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1354, 55 USPQ2d 1927, 1930 (Fed. Cir. 2000).

The district court denied Diamond's JMOL on inducement because the jury determined that "none of the machines sold by FPS infringe any of the patents in suit." *Moba, No. 95-CV-2631*, 2000 U.S. Dist. LEXIS 15483, at *43. Because this court upholds the verdict at *43, because this court upholds the verdict that claim 28 of the '494 patent is not directly infringed, the trial court correctly determined that FPS does not indirectly infringe that claim. *Met-Cell Sys. Corp. v. Korner Unlim.-ized, Inc.*, 803 F.2d 684, 687, 231 USPQ 474, 477 (Fed. Cir. 1986) ("[T]here can be no inducement of infringement without direct infringement by some party."). However, this court has held that the Moba Omnia method directly infringed claim 24 of the '505 patent. Therefore, the issue of infringement by FPS depends on whether FPS "actively induced" infringement" within the meaning of 35 U.S.C. § 271(b).

Although § 271(b) does not use the word "knowingly," this court has uniformly imposed a knowledge requirement. *Water Tech. Corp. v. Calco, Ltd.*, 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988); *C.R. Bard, Inc. v. 4d Advanced Card. Sys., Inc.*, 911 F.2d 670, 15 USPQ2d 1540 (Fed. Cir. 1990). This court defined the generally applicable intent standard in *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468-69, 15 USPQ2d 1525, 1528-29 (Fed. Cir. 1990). In *Hewlett-Packard*, this court held that "proof of actual intent to cause the act which constitute the infringement is a necessary prerequisite to finding active inducement" under § 271(b). *Hewlett-Packard*, 909 F.2d at 1469. *Hewlett-Packard* (HP) was the assignee of the Labarre patent on aspects of X-Y plotter technology. Bausch & Lomb, Inc. (B & L) manufactured and sold X-Y plotters and a variety of other electronic equipment through a division that it sold to Ametek, Inc. HP alleged that B & L induced infringement of the Labarre patent by its sale to Ametek. This court found, however, that the sale did not evince an intent to induce infringement, but, rather, merely an intent to sell at the highest price. This court particularly noted that B & L had no interest in, nor control over, Ametek's use of the pur-

IV.

The Patent Act erects a presumption of validity for an issued patent. 35 U.S.C. § 282 (1994). Therefore, invalidity requires clear and convincing evidence. *Id.*; *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 54 USPQ2d 1673 (Fed. Cir. 2000). Because this court has determined that FPS may infringe claim 24 of the '505 patent, depending on resolution of the inducement issue, this court also addresses FPS's appeal of the jury verdict upholding the validity of that claim. FPS argues that the claim is invalid as anticipated, not enabled, and not adequately described.

A.

A patent specification must contain an adequate written description. 35 U.S.C. § 112, § 1 (1994). Whether a specification complies with the written description requirement of § 112, § 1 is a question of fact that this court reviews for substantial evidence. *Advanced Display Sys.*, 212 F.3d at 1281.

FPS argues here that if claim 24 of the '505 patent encompasses lifting eggs from a moving conveyor, as this court has determined, then claim 24 must be invalid because the '505 patent specification discloses no such conveyor mechanism. In support of this proposition, FPS cites to this court's decision in *Genery Gallery, Inc. v. Berklene Corp.*, 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998). Federal Circuit case law reflects two applications of 35 U.S.C. § 112, § 1. First, in 1967,

stantial record evidence. Therefore, the trial court correctly determined that claim 24 is not invalid for lack of an adequate written description.

B.

The patent specification must disclose information sufficient to enable those skilled in the art to make and use the claimed invention. 35 U.S.C. § 112 § 1. Thus, some experimentation is required to practice the claimed invention, so long as it is not undue. *Atlas Powder Co. v. E.I. DuPont de Nemours & Co.*, 750 F.2d 1569, 1576, 224 USPQ 409, 413 (Fed. Cir. 1984). Enablement under 35 U.S.C. § 112, § 1, is a question of law that this court reviews *de novo*. *Molecular Research Corp. v. CBS Inc.*, 793 F.2d 1261, 1268, 229 USPQ 805, 810 (Fed. Cir. 1986). This court reviews a jury's underlying factual determinations related to enablement for substantial evidence. *Mitsubishi Elec. Corp. v. Amper Corp.*, 190 F.3d 1300, 1309, 51 USPQ2d 1910, 1916 (Fed. Cir. 1999).

(6) FPS contends that the specification does not enable one of ordinary skill in the art to lift eggs from a moving conveyor belt without undue experimentation. Nevertheless, FPS presented no record evidence recounting the amount of experimentation one of skill in the art would require to develop the conveyor lifting system of the Moba Omnia in view of the 505 patent disclosure. Rather, FPS asked the jury and asks this court to draw the inference of undue experimentation based on limited general testimony of the development of that conveyor lifting mechanism taken separate from the disclosure of the '505 patent. The trial court found that evidence insufficient to prove undue experimentation. Hence, this court holds that substantial evidence supports the verdict of the jury that claim 24 was not invalid for lack of enablement.

C.

Anticipation under 35 U.S.C. § 102 requires that a single prior art reference disclose each and every limitation of the claimed invention. *Electro Med. Sys. S.A. v. Cooper Life Sci.*, 34 F.3d 1048, 1052, 32 USPQ2d 1017, 1019 (Fed. Cir. 1994). This court reviews a jury's conclusions on anticipation for substantial evidence. *Advanced Display Sys.*, 212 F.3d at 1281.

FPS argues that claim 24 of the '505 patent is anticipated by its own Moba prior art machines, such as the Type 4.9 or Type 68 machines that provided the basis for the Omnia

1438

ional descriptions of genetic material necessarily fail as a matter of law to meet the written description requirement; rather, the requirement may be satisfied if in the knowledge of the art the disclosed function is sufficiently correlated to a particular, known structure.

Angen, 314 F.3d at 1322.

[5] The test for compliance with § 112 has always required sufficient information in the original disclosure to show that the inventor possessed the invention at the time of the original filing. *See Vas-Cath*, 933 F.2d at 1561 ("Adequate description of the invention guards against the inventor's overreaching by insisting that he recount his invention in such detail that his future claims can be determined to be encompassed within his original creation"). The possession test requires assessment from the viewpoint of one of skill in the art. *Id.* at 1563-64 ("the applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention") (emphasis in original); *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 997, 54 USPQ2d 1277, 1232 (Fed. Cir. 2000) ("The written description requirement does not require the applicant to describe exactly the subject matter claimed. [Instead] the description must clearly allow persons of ordinary skill in the art to recognize that [the or she] invented what is claimed.") (citation omitted). In *Exo* and *Angen*, the record showed that the specification that taught one of skill in the art to make and use an invention also convinced that artisan that the inventor possessed the invention. Similarly in this case, the *Lilly* disclosure rule does not require a particular form of disclosure because one of skill could determine from the specification that the inventor possessed the invention at the time of filing.

Accordingly, substantial evidence supports the jury's finding that the '505 patent is not invalid for lack of an adequate written description. The '505 patent specification describes every element of claim 24 in sufficient detail so that one of ordinary skill in the art would recognize that the inventor possessed the invention at the time of filing. FPS's contention that the '505 patent does not adequately disclose lifting eggs from a moving conveyor merely revives its non-infringement argument in the cloak of a validity challenge. As noted, the jury found that one of skill in the art would discern possession of the invention at the time of filing, a finding supported by sub-

called 'description requirement' of § 112, first paragraph." In *Genery Gallery*, the patentee described in the specification a sectional sofa with a center console including recliner controls. The specification as filed clearly identified the console as the only possible location for the controls. From the specification, it was clear that the patentee considered placement of the controls in the center console "to be an essential element of its invention." *Genery Gallery*, 134 F.3d at 1479. Hence, this court limited the scope of the patentee's claims to a sofa with controls located in a center console. "Accordingly, [the patentee's] original disclosure serves to limit the permissible breadth of his later-drafted claims." *Id.* at 147 (emphasis added). Thus, because *Genery Gallery* applied § 112, § 1, to hold the patentee to the scope of its original filing, it does not apply in this case where FPS made no allegation at all that the disclosure of the '505 patent did not show possession of a later-filed claim.

The second application of the written description requirement is reflected in *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). There, this court invoked the written description requirement in a case without priority issues. Invoking § 112, *Lilly* required a precise definition of a DNA sequence in the patent specification. In more recent cases, however, this court has distinguished *Lilly*. For instance, in *Exo Biochem, Inc. v. GenProbe, Inc.*, 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002), neither the specification nor the deposited biological material recited the precise "structure, formula, chemical name, or physical properties" required by *Lilly*, *id.* at 1324 (quoting *Lilly*, 119 F.3d at 1566). Although this court initially determined that the specification in *Exo* did not satisfy the *Lilly* disclosure rule, it revisited the issue and remanded to the district court. The court instructed:

On remand the court should determine whether a person of skill in the art would glean from the written description, including information obtainable from the depositions of the claimed sequences, subsequences, mutated variants and mixtures sufficient to demonstrate possession of the generic scope of the claims.

Exo, 296 F.3d at 1328. Similarly, in this court's most recent pronouncement, it noted: More recently, in *Exo Biochem*, we clarified that *Eli Lilly* did not hold that all func-

this court's predecessor inaugurated use of § 112 to prevent the addition of new matter to claims. *In re Ruchig*, 379 F.2d 990, 154 USPQ 118 (CCPA 1967). As this court's predecessor noted, "[t]he function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed by him." *In re Wertheim*, 341 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). Although the statute proscribes addition of new matter to a specification or claims under § 132, the United States Court of Customs and Patent Appeals decided to police the addition of new matter to claims separately using § 112. *In re Rasmussen*, 650 F.2d 1212, 1214, 211 USPQ 323, 325-26 (CCPA 1981). This court's predecessor explained that the use of § 132 or § 112 was synonymous because "a rejection of an amended claim under § 132 is equivalent to a rejection under § 112, first paragraph." *Id.* Since then, this court has continued to use § 112 to ensure that a patentee had possession at the time of filing of subject matter subsequently claimed. In this court's most recent application of the written description doctrine, it noted: "The purpose of the written description requirement is to prevent an applicant from later asserting that he invented that which he did not; the applicant for a patent is therefore required to recount his invention in such detail that his future claims can be determined to be encompassed within his original creation." *Angen Inc. v. Hoechst Marion Roussel Inc.*, 314 F.3d 1313, 1330, 63 USPQ2d 1385, 1397 (Fed. Cir. 2003) (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561, 19 USPQ2d 1111, 1115 (Fed. Cir. 1991)). In that setting, the written description is the metric against which a subsequently added claim is measured to determine if it is due the priority date of the original patent. *Id.* at 1360 ("The question raised by these situations is most often phrased as whether the application provides 'adequate support' for the claim(s) at issue; it has also been analyzed in terms of 'new matter' under 35 U.S.C. § 132."). *In re Wright*, 866 F.2d 422, 424, 9 USPQ2d 1649, 1651 (Fed. Cir. 1989) ("When the scope of a claim has been changed by amendment in such a way as to justify an assertion that it is directed to a different invention than was the original claim, it is proper to inquire whether the newly claimed subject matter was described in the patent application when filed as the invention of the applicant. That is the essence of the so-

stantial record evidence. Therefore, the trial court correctly determined that claim 24 is not invalid for lack of an adequate written description.

B.

The patent specification must disclose information sufficient to enable those skilled in the art to make and use the claimed invention. 35 U.S.C. § 112 ¶ 1. That some experimentation is required to practice the claimed invention is permissible, so long as it is not undue. *Atlas Powder Co. v. E.I. DuPont de Nemours & Co.*, 750 F.2d 1569, 1576, 224 USPQ 409, 413 (Fed. Cir. 1984). Enablement under 35 U.S.C. § 112, ¶ 1, is a question of law that this court reviews *de novo*. *Molecular Research Corp. v. CBS, Inc.*, 795 F.2d 1261, 1268, 229 USPQ 805, 810 (Fed. Cir. 1986). This court reviews a jury's underlying factual determinations related to enablement for substantial evidence. *Mitsubishi Elec. Corp. v. Ampex Corp.*, 190 F.3d 1300, 1309, 51 USPQ2d 1916 (Fed. Cir. 1999).

[6] PPS contends that the specification does not enable one of ordinary skill in the art to lift eggs from a moving conveyor belt without undue experimentation. Nevertheless, PPS presented no record evidence recounting the amount of experimentation one of skill in the art would require to develop the conveyor lifting system of the Moba Omnia in view of the '505 patent disclosure. Rather, PPS asked the jury and asks this court to draw the inference of undue experimentation based on limited general testimony of the development of that conveyor lifting mechanism taken separate from the disclosure of the '505 patent. The trial court found that evidence insufficient to prove undue experimentation. Hence, this court holds that substantial evidence supports the verdict of the jury that claim 24 was not invalid for lack of enablement.

C.

Anticipation under 35 U.S.C. § 102, requires that a single prior art reference disclose each and every limitation of the claimed invention. *Eletron Med Sys. S.A. v. Cooper Life Sci.*, 34 F.3d 1048, 1052, 32 USPQ2d 1017, 1019 (Fed. Cir. 1994). This court reviews a jury's conclusions on anticipation for substantial evidence. *Advanced Display Sys.*, 212 F.3d at 1281.

PPS argues that claim 24 of the '505 patent is anticipated by its own Moba prior art machines, such as the Types 4-9 or Type 68 machines that provided the basis for the Omnia

called "description requirement" of § 112, first paragraph.

In *Genery Gallery*, the patentee described in the specification a sectional sofa with a center console including recliner controls. The specification as filed clearly identified the console as the only possible location for the controls. From the specification, it was clear that the patentee considered placement of the controls in the center console "to be an essential element of his invention." *Genery Gallery*, 134 F.3d at 1479. Hence, this court limited the scope of the patentee's claims to a sofa with controls located in a center console: "Accordingly, [the patentee's] original disclosure serves to limit the permissible breadth of his later-drafted claims." *Id.* at 147 (emphasis added). Thus, because *Genery Gallery* applied § 112, ¶ 1, to hold the patentee to the scope of its original filing, it does not apply in this case where PPS made no allegation at all that the disclosure of the '505 patent did not show possession of a later-filed claim.

The second application of the written description requirement is reflected in *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). There, this court invoked the written description requirement in a case without priority issues. Invoking § 112, Lilly required a precise definition of a DNA sequence in the patent specification. In more recent cases, however, this court has distinguished *Lilly*. For instance, in *Exo Biochem, Inc. v. GenProbe, Inc.*, 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002), neither the specification nor the deposited biological material recited the precise "structure, formula, chemical name, or physical properties" required by *Lilly*, *id.* at 1324 (quoting *Lilly*, 119 F.3d at 1566). Although this court initially determined that the specification in *Exo* did not satisfy the *Lilly* disclosure rule, it revisited the issue and remanded to the district court. The court instructed:

On remand the court should determine whether a person of skill in the art would glean from the written description, including information obtainable from the deposition of the claimed sequences, subsequences, mutated variants and mixtures sufficient to demonstrate possession of the genetic scope of the claims.

Exo, 296 F.3d at 1328. Similarly, in this court's most recent pronouncement, it noted: More recently, in *Exo Biochem*, we clarified that *Eli Lilly* did not hold that all func-

this court's predecessor inaugurated use of § 112 to prevent the addition of new matter to claims. *In re Ruchig*, 379 F.2d 990, 154 USPQ 118 (CCPA 1967). As this court's predecessor noted, "[t]he function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him." *In re Wertheim*, 341 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). Although the statute proscribes addition of new matter to a specification or claims under § 132, the United States Court of Customs and Patent Appeals decided to police the addition of new matter to claims separately using § 112. *In re Rasmussen*, 650 F.2d 1212, 1214, 211 USPQ 323, 325-26 (CCPA 1981). This court's predecessor explained that the use of § 132 or § 112 was anonymous because of "a rejection of an amended claim under § 132 is equivalent to a rejection under § 112, first paragraph." *Id.* Since then, this court has continued to use § 112 to ensure that a patentee had possession at the time of filing of subject matter subsequently claimed. In this court's most recent application of the written description doctrine, it noted: "The purpose of the written description requirement is to prevent an applicant from later asserting that he invented in such detail that his future claims can be determined to be encompassed within his original, creation." *Angen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330, 65 USPQ2d 1385, 1397 (Fed. Cir. 2003) (citing *Ver-Carb Inc. v. Makurkar*, 935 F.2d 1555, 1561, 19 USPQ2d 1111, 1115 (Fed. Cir. 1991)). In that setting, the written description is the metric against which a subsequently added claim is measured to determine if it is due the priority date of the original patent. *Id.* at 1560 ("The question raised by these situations is most often phrased as whether the application provides 'adequate support' for the claim(s) at issue; it has also been analyzed in terms of 'new matter' under 35 U.S.C. § 132."); *In re Wright*, 866 F.2d 422, 424, 9 USPQ2d 1649, 1651 (Fed. Cir. 1989) ("When the scope of a claim has been changed by amendment in such a way as to justify an assertion that it is directed to a different invention than was the original claim, it is proper to inquire whether the newly claimed subject matter was described in the patent application when filed as the invention of the applicant. That is the essence of the so-

1440 Moba B.V. v. Diamond Automation Inc. 66 USPQ2d 1441

lifting mechanism. Nevertheless, as was testified by FPS's own expert witness, Dr. Kirk, those prior art Moba machines do not continuously advance eggs through weighing stations while simultaneously weighing the eggs, as is required by claim 24. Hence, this court finds that claim 24 is not anticipated as a matter of law by the asserted Moba prior art machines.

In sum, because substantial evidence supports the jury verdict that claim 24 of the '503 patent is not invalid, this court affirms that portion of the district court judgment.

CONCLUSION

The district court correctly determined that substantial evidence supports the jury verdict that FPS does not infringe claim 28 of the '494 patent. This court affirms, therefore, the district court's denial of Diamond's JMOL motion on that issue. Because FPS does not infringe the '494 patent, this court makes no determination as to that patent's validity. On claim 24 of the '503 patent, this court remands for further determination of whether FPS induced its customers to infringe under a correct reading of that claim. This court reverses, therefore, the district court's denial of JMOL on those issues and remands. Because substantial evidence supports the validity of properly construed claim 24, this court affirms that portion of the district court's judgment.

COSTS

Each party shall bear its own costs.

AFFIRMED-IN-PART, REVERSED-IN-PART, and REMANDED

Rader, J., concurring.

This case reveals a distinct institutional difference between the United States Court of Appeals for the Federal Circuit and the other twelve circuits. Whenever a Federal Circuit panel makes an error interpreting the patent code, every district court in the nation, and even every later Federal Circuit panel, is obliged to follow and perpetuate the error. Even the Supreme Court has difficulty identifying errors for correction because this court's national jurisdiction requires universal application of a mistake. This particular Moba case does not originate, but perpetuates such an error.

This mistake misapplies both the statutory law and the policy underlying United States patent law. Specifically, this court – contrary to the statute and its own thirty-year body of

case law – applies the written description doctrine beyond the purpose for which the doctrine was created, namely priority protection. By making written description a free-standing disclosure doctrine, this court produces numerous unintended and deleterious consequences.

I.

This case illustrates some of the unintended consequences of this judge-made doctrine. Each time a claim encompasses more than the preferred embodiment of the invention described in the specification, a defendant can assert that the patent is invalid for failure to describe the entire invention. Under the expanded written description doctrine, every claim construction argument could conceivably give rise to a validity challenge as well.

In this case, for instance, FPS Food Processing Systems, Inc. ("FPS") argues if claim 24 of the '503 patent encompasses lifting eggs from a moving conveyor, as this court has determined, then claim 24 must be invalid because the '503 patent specification discloses no such conveyor mechanism. FPS's routine claim construction argument becomes a validity challenge under the non-statutory doctrine created in the *Lilly* case. *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). Fortunately, this court did not fall for FPS's argument.

Unfortunately, however, this court is not the only judicial actor that must deal with the unintended consequences of the *Lilly* doctrine. Because FPS argued that the specification did not disclose some feature of the claimed invention, the trial court had to take extensive testimony and ask a jury to speculate whether the inventor "possessed" the full invention.

The trial court faced even greater confusion because FPS also asserted that the specification does not enable the claimed invention. Thus, the trial court asked this jury to determine whether one of skill in the art would have been able to make and use the invention based on the patent's specification. Then the trial court asked the jury to look at the specification again to determine whether the inventor "possessed" the invention. Thus, this jury faced the cumbersome task of separating two doctrines for sufficiency of disclosure in a patent. Under Federal Circuit case law, FPS asked this jury to decide that the patent's disclosure can enable a skilled artisan to make and practice the entire invention, but still not inform that same artisan that the inventor was

66 USPQ2d Moba B.V. v. Diamond Automation Inc. 1441

§ 132. This extra license with the language of title 35 did no harm because the Court of Customs and Patent Appeals recognized "that a rejection of an amended claim under § 132 is equivalent to a rejection under § 112, first paragraph." *In re Ruckriegel*, 650 F.2d 1212, 1214, 211 USPQ 323, 325 (CCPA 1981).

Thus, from 1967 until 1997, the new matter doctrine, cloaked either in the specific language of § 132 or the innovative new reading of § 112, operated only to determine whether a new claim language deserved priority back to the patent's original filing date. In other words,

[w]hen the scope of a claim has been changed by amendment in such a way as to justify an assertion that it is directed to a different invention than was the original claim, it is proper to inquire whether the claim, it is proper to inquire whether the newly claimed subject matter was described in the patent application when filed as the invention of the patents. That is the essence of the so-called 'description requirement' of § 112, first paragraph.

In re Wright, 866 F.2d 422, 424, 9 USPQ2d 1649, 1651 (Fed. Cir. 1989) (emphasis added).

The new matter doctrines did not extend beyond priority issues because § 112 already supplies an entitlement to ensure that an inventor adequately describes the invention in exchange for temporary rights of exclusivity. For over thirty years this court and its predecessor understood "this basic principle of patent law and confined the written description doctrine to its purpose – policing priority of invention."

In 1997, this court inexplicably wrote a new disclosure requirement, found nowhere in title 35, and attributed that new requirement to the written description doctrine. This new disclosure doctrine, applied so far only to biotechnology cases, requires a nucleotide-by-nucleotide recitation of the structure of a biological invention. *Lilly*, 119 F.3d at 1367. Ironically, this court could have reached the same result in *Lilly* without making a new disclosure rule. Under the statute's enablement rule, this court would have also determined that the invention was not sufficiently

¹ See generally *Ento Biochem, Inc. v. Gen-Probe, Inc.*, 63 USPQ2d 1609, 1628 (Fed. Cir. 2002) (app) (rehearing en banc denied) (Rader, J., dissenting) (showing from every written description case except *Lilly* to show they only employed the doctrine to police priority).

66 USPQ2d 1443
Moba B.V. v. Diamond Automation Inc.

is to show possession, and to show possession is to enable.⁶

IV

In sum, the *Lilly* rule is not just a mere one-time mistake. It defies over thirty years of case law. It finds no specific support in any statutory language. It creates a technology-specific rule in a technology-neutral statute. It distorts the statute's rules for adequate disclosure of inventions. It complicates biotechnology patent drafting to the point of near impossibility and invites invalidating mistakes. It prices non-corporate inventors out of some biotechnological invention markets. Last, but not least, it burdens both trial and appellate courts with unnecessary and confusing procedures in otherwise simple cases like this one.

Of course, this court should recognize and prevent, rather than ignore and create, mistakes in the interpretation of the Patent Act. In the rare event that this court makes this type of error, this Circuit has a unique obligation to swiftly pursue *en banc* correction. Unlike regional circuits, this court cannot rely on circuit splits to identify an issue for Supreme Court correction. Moreover, this court's jurisdiction over patent requires every trial court and this court itself to multiply this type of error until corrected. Accordingly, this court has a greater responsibility to pursue *en banc* correction of serious errors in interpretations of the Patent Act, such as the *Lilly* rule.

Alternatively, as indicated in Judge Bryson's concurring opinion, the problem in this area of the law may lie in the line of cases stemming from the *Ruchig* case. In that context, I agree that all priority issues can be more than adequately resolved under the new matter doctrine in 35 U.S.C. § 132.

Bryson, J., concurring.
Having been a member of the panel that decided *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997), I write to make a single point with regard to the court's decision in

⁶ Patent scholars have encouraged this court to "revisit the narrowness of the written description requirement and redirect [it] energies towards refining the claim-ment concept, particularly as it correlates to the 'scope.'" Jais, Mark D., "On Courts Facing Case: Confronting the 'Written Description Requirement' (and Other Unlucky Patent Disclosure Doctrines)," 2 Wash. U. J. L. & Pol'y 53, 62, 107 (2000) ("the fault [for the confusion about the standard for patent disclosure] lies in the courts' hesitancy to explore the power of the enablement requirement....").

66 USPQ2d 1442
Moba B.V. v. Diamond Automation Inc.

disclosed.² Instead, this court presumed to create another doctrine for sufficiency of disclosure. Although characterized as a written description doctrine, the *Lilly* rule cannot in fact trace its origin to the statute or to any prior case. See generally *Enzo*, 63 USPQ2d at 1627-29.

Confusing the *Lilly* disclosure doctrine with the traditional written description doctrine, this court has stated that written description is separate from enablement. See *Angen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 63 USPQ2d 1385 (Fed. Cir. 2003). Of course, this proposition is true with respect to the traditional written description/new matter doctrine. On the other hand, the only way to distinguish the *Lilly* rule from enablement is to construe *Lilly* as requiring more disclosure than necessary to enable one of skill in the art to make and use the invention, a "super-enablement" standard.³ Interpreting *Lilly* in those terms, however, presumes several consequences for biotechnology. For biotechnological inventions, *Lilly* purports to require the recitation, nucleotide by nucleotide, of the entire sequence of a new protein or composition. This non-statutory rule jeopardizes the validity of many inventions in biotechnology pat-

² U.S. Patent No. 4,632,525, at issue in *Lilly*, claimed priority to a patent application filed in 1977. The *Lilly* biotechnology was in its early stages in 1977. Under a proper enablement analysis, the simple disclosure of human insulin cDNA in the '525 patent would have failed to enable a person skilled in the art in 1977 to practice the claimed invention. Thus, the claims at issue would have been found invalid for lack of enablement.

³ See *Rail, Ant. Intellectual Property Rights in Biotechnology: Addressing New Technology*, 34 Wake Forest L. Rev. 827, 834-35 (Fall, 1999) ("the *Lilly* court used the written description requirement as a type of elevated enablement requirement."); Sampson, Margaret, "The Evolution of the Enablement and Written Description Requirements Under 35 U.S.C. § 112 in the Area of Biotechnology," 15 Berkeley Tech. L.J. 1233, 1262 (Fall 2000) ("The primary argument against the Federal Circuit's heightened written description requirement for biotechnological invention is that... it also reduces incentives to invest in innovation by depriving potential patentees of the opportunity to fully benefit from their research."); Mueller, Janice M., "The Evolving Application of the Written Description Requirement to Biotechnological Inventions," 13 Berkeley Tech. L.J. 615, 617 (Spring 1998) ("The *Lilly* decision establishes uniquely rigorous rules for the description of biotechnological subject matter that significantly curtail written description doctrine away from its historic origin and policy grounding. The *Lilly* court elevated written description to an effective super-enablement standard....").

III

Fortunately, the viability of the *Lilly* rule is on the decline. After *Enzo*, this court recognized that *Lilly* did not hold that all functional descriptions of genetic material necessarily fail as a matter of law to meet the written description requirement, rather, the requirement may be satisfied if in the knowledge of the art the disclosed function is sufficiently correlated to a particular, known structure. *Angen*, 314 F.3d at 1332, 1361 (dissent). "[T]he majority... verges on confusing *Ely Lilly* to its facts...."

In this case, as in *Enzo*, the court explained that the written description requirement is satisfied when "one of skill in the art would possess possession of the invention at the time of filing." Indeed, the *Enzo* court struggled to distinguish the so-called written description requirement from enablement. In reversing its original decision that deposits of biological material do not satisfy the written description requirement, the *Enzo* panel cited cases that found that such deposits satisfy the enablement requirement.⁴ In other words, because *Lilly* did in fact compel the result of the original *Enzo* panel, the court on reconsideration had to concede that deposited material satisfies the *Lilly* standard if it meets the enablement standard.

With some understanding of the difficulties and redundancy of the *Lilly* rule, the Federal Circuit has begun to convert it into the enablement doctrine with a different label. Unfortunately, that leaves trial courts in the fix that the trial court faced in this case – presenting the jury two disclosure doctrines with apparently overlapping requirements. After all, to enable

⁴ See *Enzo*, 296 F.3d at 125 ("Whether reference to a deposit of a nucleotide sequence may adequately describe that sequence is an issue of first impression in this court. In light of the history of biological deposits for patent purposes (and the goals of patent law... we have public depositories... constitutes an adequate description of the deposited material... The practice of depositing biological material more primarily to satisfy the enablement requirement of § 112, ¶ 1") (citing *In re Arzoumanidis*, 434 F.2d 1390, 168 USPQ 99, 100 (CCPA 1970) (finding that making the biological material available to the public enabled the public to make and use the claimed antibodies)).

Returning to the consequences of the *Lilly* rule for biotechnology, the burdens of this elevated "precise definition" standard unnecessarily increase the cost and time required to prepare and prosecute a biotechnology patent. Moreover, university inventors and non-corporate biotechnologists must endure significant expense and delay to acquire the sequence of a potential invention for disclosure under the *Lilly* rule. Sequencing is very ex-

⁵ See *Eli Lilly*, 119 F.3d at 1566 (citing the "precise definition" standard of *Fier v. Day*, 884 F.2d 1164, 1171 (25 USPQ2d 1601) (Fed. Cir. 1993)).

that case. *Lilly* has been criticized as departing from prior law by applying the written description requirement for a purpose other than to police priority. Setting aside the question whether the disclosure requirement imposed in *Lilly* was unduly stringent, a point that Judge Rader addresses in his concurring opinion, I do not believe that *Lilly* constituted a departure from prior law when it applied the written description requirement in a non-priority context.

In *re Ruschig*, 379 F.2d 990, 134 USPQ 118 (CCPA 1967), held that 35 U.S.C. § 112, paragraph 1, contains a written description requirement that is separate from the enablement requirement found in the same paragraph. That interpretation of the statute may or may not have been correct—there is something to be said for either side of that question of statutory construction. But there is no question that *Ruschig* and subsequent decisions have held that written description and enablement are separate statutory requirements, and that written description is not simply a facet of enablement. Judge Rader acknowledges as much, but argues that as long as the *Ruschig* doctrine was confined to cases involving priority disputes, that reading of the statutory language worked no particular mischief, as it was simply redundant of the statutory prohibition against new matter in 35 U.S.C. § 132. The problem, as I see it, is that if it is correct to read section 112 as containing a separate written description requirement, it is difficult to find a principled basis for restricting that requirement to cases involving priority disputes. There is no language in section 112 that would support such a restriction, and I am unaware of any other basis for construing the statute in that fashion, unless we are simply to announce that the *Ruschig* cases will be tolerated, but must be limited to their facts. Put another way, if the *Ruschig* line of cases is sound as a matter of statutory construction, it is difficult to see why that construction does not apply equally in the *Lilly* non-priority context.

Perhaps the entire line of cases stemming from *Ruschig* is wrong, and perhaps we should at some point address that question en banc. I take no position on that issue at this juncture. I think it is worth pointing out, however, that the real question raised by Judge Rader's statutory analysis is not whether *Lilly* was an unwarranted departure from the *Ruschig* line of cases, but whether that entire line

of cases is based on a fundamentally flawed construction of 35 U.S.C. § 112, paragraph 1.

Apex Inc. v. Raritan Computer Inc.

U.S. Court of Appeals
Federal Circuit
No. 02-1303

Decided April 2, 2003

PATENTS

(1) Patent construction — Claims — Means (§ 125.1307)

Federal district court, in concluding that "circuit" limitation in claims for computerized switching systems are means-plus-function limitations, erred by relying on single word "circuit" rather than examining limitations as whole, since limitations do not use word "means," and thus invoke rebuttable presumption that 35 U.S.C. § 112, sixth paragraph, does not apply, since ordinary meaning of "circuit" in context of computing connotes some structure to person of ordinary skill in art, since nothing in specification or prosecution history indicates that ordinary meaning does not apply, and since every use of term in asserted claims includes additional adjectival qualification, such as "interface," "programmable," or "logic," that further identifies sufficient structure to perform claimed functions.

(2) Patent construction — Claims — Means (§ 125.1307)

"Interface circuit" limitations in claims for computerized switching systems are not means-plus-function limitations, since relevant definition of "interface circuit" in context of computing connotes specific structures, such as line driver and analog-to-digital converters, to person of ordinary skill in art, and since nothing in specification or prosecution history indicates that ordinary meaning of "interface circuit" does not apply to limitations.

(3) Patent construction — Claims — Broad or narrow (§ 125.1303)

Patent construction — Claims — Defining terms (§ 125.1305)

Term "serial data packet," as used in claims of patents for computerized switching

systems, does not require capability of including both keyboard and mouse signals, since ordinary meaning of "data packet" is "a unit of information transmitted as a whole from one device to another on a network," since nothing in written description suggests that keyboard signal must accompany mouse signal, and since prosecution history does not evince need to depart from ordinary meaning supported by written description; thus, "serial data packet" is properly construed to mean unit of information transmitted as whole from one device to another on network that includes keyboard signal, mouse signal, or both.

(4) Patent construction — Claims — Broad or narrow (§ 125.1303)

Particular patents — Electrical — Computerized switching systems
5,884,096, Beasley, Seifert, Lacrampe, Huffington, Greene, and Hafer, interconnection system for viewing and controlling remotely connected computers with on-screen video overlay for controlling of the interconnection switch, judgment of noninfringement vacated.
5,937,176, Beasley, Seifert, Lacrampe, Huffington, Greene, and Hafer, interconnection system having circuits to packetize keyboard/mouse electronic signals from plural workstations and supply to keyboard/mouse input of remote computer systems through a crosspoint switch, judgment of noninfringement vacated.
6,112,264, Beasley, Seifert, Lacrampe, Huffington, Greene, and Hafer, computer interconnection system having analog overlay for remote control of the interconnection switch, judgment of noninfringement vacated.

(5) Patent construction — Claims — Broad or narrow (§ 125.1303)

Term "switch," as used in claims of patents for computerized switching systems, is not limited to device that opens or closes circuit to form direct path between inputs and outputs, since, in art of computer networking, ordinary meaning of "switch" is "a device capable of forwarding packets directly to the ports associated with particular network addresses," since written description does not limit "switch" to device that opens or closes circuit to form direct path, and since nothing in prosecution history suggests that direct path is required.

(6) Patent construction — Claims — Broad or narrow (§ 125.1303)

Patent construction — Claims — Defining terms (§ 125.1305)

Appeal from the U.S. District Court for the Southern District of New York, Pollack, S.J. Action by Apex Inc. against Raritan Computer Inc. for patent infringement. Plaintiff appeals from final judgment of noninfringement. Vacated and remanded.
James D. Berquist, J. Scott Davidson, and Donald L. Jackson, of Nixon & Vanderhye, Arlington, Va., for plaintiff-appellant.
John F. Ward, John W. Olivo Jr., and David M. Hill, of Ward & Olivo, New York, N.Y., for defendant-appellee.

2. Verve v. Crane Cam Inc., 64 USPQ2d 1051 Fed Cir. 2002), pages 71-73.

65 USPQ2d Verve LLC v. Crane Cam Inc. 1051

to determine whether inequitable conduct existed. First the party alleging inequitable conduct must make a threshold showing, establishing by clear and convincing evidence that the applicant failed to disclose material information to the PTO and that the applicant intended to mislead or deceive the PTO into granting the patent. *ATD Corp. v. Lydall, Inc.*, 159 F.3d at 546. Once that threshold showing is established, the court balances the levels of materiality and intent to determine whether inequitable conduct before the PTO has indeed occurred. *Id.*, citing *Kingsdown Medical Components, Ltd. v. Hollister Inc.*, 863 F.2d 867, 872, 9 USPQ2d 1384, 1389 (Fed. Cir. 1988).

(2) Regarding the above circumstances (apart from the Gross & Zidulka references) that Defendant has alleged resulted in Plaintiff's inequitable conduct, Defendant has not made even the barest threshold showing of materiality. Defendant merely has asserted the existence of these circumstances, without providing any evidentiary support as to their materiality or relevance. Unsupported assertions that a fact is material do not make it so. Because Defendant has not met the materiality threshold, the Court need not go any further in its analysis. Plaintiff's motion for partial summary judgment is granted and Defendant's affirmative defense of inequitable conduct is eliminated.

For the reasons stated, **IT IS HEREBY ORDERED:**

1/ Plaintiff's Motion for Partial Summary Judgment (Doc. No. 731) is **GRANTED**.

Verve LLC v. Crane Cam Inc.
U.S. Court of Appeals
Federal Circuit
No. 01-1417
Decided November 14, 2002

PATENTS

[1] Patentability/Validity — Specification — Claim adequacy (§ 115.1109)

Patent construction — Claims — Defining terms (§ 125.1305)

Resolution of any ambiguity arising from claims and specification may be aided by extrinsic evidence.

1050 Advanced Respiratory Inc. v. Electromed Inc. 65 USPQ2d

Based upon these circumstances, Defendant asserts that Plaintiff's Motion for Partial Summary Judgment to eliminate Defendant's inequitable conduct defense is inappropriate.

Discussion

2. Other Allegations of Inequitable Conduct

In its Response to Plaintiff's Motion for Partial Summary Judgment, Defendant cites several other circumstances that Defendant alleges evidence Plaintiff's inequitable conduct before the PTO. Specifically, Defendant points to the following circumstances:

a. Defendant alleges that the Fish & Richardson opinion includes prior art relevant to the '662 and '263 Patents and that such prior art was not made of record in the '797 patent application.

b. Defendant alleges that Plaintiff did not include other prior art in the '662 or '797 Patent applications for consideration by the PTO. This prior art allegedly includes publications regarding high frequency chest compression studies and devices, a reference to Canadian Patent No. 1,222,889, prior art brochures, and selected readings.

c. Defendant alleges that Plaintiff failed to disclose several claims that were rejected in the '797 Patent application as unpatentable.

d. Defendant alleges that new matter was added to the '662 Patent application. Specifically, Defendant alleges that Plaintiff modified Claim 1 of the '662 Patent application to delete the word "positive" and add the word "continuous" to distinguish the air flow generator of the '662 Patent application from the air flow generator in the '263 Patent.

e. Defendant alleges that Plaintiff did not disclose to the PTO the structure, operation, and printed materials related to Plaintiff's Model 102 respiratory vest systems, such systems which were in use one year prior to the filing of the '797 Patent application.

f. Defendant alleges that Plaintiff did not disclose to the PTO that Plaintiff's Model 103 respiratory vest systems were in public use more than one year before the filing of the '797 Patent application.

1. Standard of Review

Summary judgment is proper if there are no disputed issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). The court must view the evidence and the inferences which may be reasonably drawn from the evidence in the light most favorable to the nonmoving party. *Enterprise Bank v. Morgan Bank of Missouri*, 92 F.3d 743, 747 (8th Cir. 1996). However, as the Supreme Court has stated, "[g]lance judgment procedure is properly regarded not as a disfavored procedural shortcut, but rather as an integral part of the Federal Rules as a whole, which are designed to secure the just, speedy, and inexpensive determination of every action." Fed. R. Civ. P. 1; *Chelover Corp. v. Carrett*, 477 U.S. 317, 327 (1986).

The moving party bears the burden of showing that there is no genuine issue of material fact and that it is entitled to judgment as a matter of law. *Enterprise Bank*, 92 F.3d at 747. The nonmoving party must demonstrate the existence of specific facts in the record which create a genuine issue for trial. *Krenik v. County of LeSueur*, 47 F.3d 933, 937 (8th Cir. 1995). A party opposing a properly supported motion for summary judgment may not rest upon mere allegations or denials, but must set forth specific facts showing that there is a genuine issue for trial. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 256 (1986); *Krenik*, 47 F.3d at 937.

2. The Gross and Zidulka References

The primary focus of Plaintiff's motion for partial summary judgment is disputing Defendant's claim that the Gross and Zidulka references were improperly excluded from the '662 Patent application. Plaintiff argues that the Federal Circuit's decision in *ATD Corp. v. Lydall, Inc.* is dispositive of this issue. The Court finds Plaintiff's arguments persuasive.

In *ATD*, the Federal Circuit Court of Appeals held that prior art references were not

1054 Verve LLC v. Crane Cams Inc. 65 USPQ2d 1055

stood by practitioners, least every patent be required to be written as a comprehensive tutorial and treatise for the generalist, instead of a concise statement for persons in the field. Thus resolution of any ambiguity arising from the claims and specification may be aided by extrinsic evidence of usage and meaning of a term in the context of the invention. The question is not whether the word "substantially" has a fixed meaning as applied to "constant wall thickness," but how the phrase would be understood by persons experienced in this field of mechanics, upon reading the patent documents. It may of course occur that persons experienced in a technologic field will have divergent opinions as to the meaning of a term, particularly as narrow distinctions are drawn by the parties or warranted by the technology. Patent disputes often raise close questions requiring refinement of technical definitions in light of particular facts. The judge will then be obliged to decide between contending positions; a role familiar to judges. But the fact that the parties disagree about claim scope does not of itself render the claim invalid.

[2] Expressions such as "substantially" are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention. Such usage may well satisfy the charge to "particularly point out and distinctly claim" the invention, 35 U.S.C. § 112, and indeed may be necessary in order to provide the inventor with the benefit of his invention. In *Andrew Corp. v. Gebel Elec. Inc.*, 847 F.2d 819, 821-22, 6 USPQ2d 2010, 2013 (Fed. Cir. 1988) the court explained that usages such as "substantially equal" and "closely approximate" may serve to describe the invention with precision appropriate to the technology and without intruding on the prior art. The court again explained in *Ecolab Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367, 60 USPQ2d 1173, 1179 (Fed. Cir. 2001) that "like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter,'" quoting *Pall Corp. v. Microm Separations, Inc.*, 66 F.3d 1211, 1217, 36 USPQ2d 1225, 1229 (Fed. Cir. 1995).

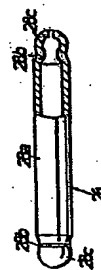
It is well established that when the term "substantially" serves reasonably to describe the subject matter so that its scope would be

understood by persons in the field of the invention, and to distinguish the claimed subject matter from the prior art, it is not indefinite. Understanding of this scope may be derived from extrinsic evidence without rendering the claim invalid. The summary judgment record offered no basis for departing from these general rules. Thus the usage "substantially constant wall thickness" does not of itself render the claims of the '315 patent indefinite. The summary judgment on this ground is vacated; we remand for further proceedings, including any appropriate recourse to extrinsic evidence concerning the usage and understanding of the term "substantially" in relevant context.

ANTICIPATION

Invalidity based on "anticipation" requires that the invention is not in fact new. *See, e.g., Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 299, 302, 36 USPQ2d 1101, 1103 (Fed. Cir. 1995) ("lack of novelty (often called 'anticipation') requires that the same invention, including each element and limitation of the claims, was known or used by others before it was invented by the patentee"). A single reference must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art. *See, e.g., In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990) ("the reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it").

The district court also held on summary judgment that the '315 invention was invalid for anticipation, based on the push rods shown in two Japanese patents designated JP 635 and JP 808. The Japanese patents show push rods that are hollow tubes with spherical shaped ends, as follows:



[3] Verve stresses that the Japanese push rods are not wider at their mid-portion like the '315 rods, but are of uniform diameter along their length. The drawings in the Japanese patents and the '315 patent reflect this distinguishing difference. Although the defendants

65 USPQ2d France Telecom S.A. v. Novell Inc. 1055

argue that the ball shape at the end of the Japanese rods is of narrower diameter than the rest of the rod and thus that the Japanese end portion is narrower than the middle portion, the invention as described and claimed in the '315 patent does not encompass a tube of uniform diameter along its length, whenever the diameter at the rounded tip.

The Japanese patents on their face do not show the push rods of the '315 patent. No question of material fact is present, for neither the structures, nor their differences, is disputed. On the undisputed facts, no reasonable trier of fact could find the '315 invention anticipated by these Japanese references. Summary judgment of invalidity on the ground of anticipation is reversed.

CONCLUSION

The summary judgment of invalidity insofar as based on anticipation is reversed. The judgment of invalidity insofar as based on indefiniteness is vacated. No other issues were decided by the district court. The case is remanded for further proceedings.

REVERSED IN PART, VACATED IN PART, AND REMANDED

France Telecom S.A. v. Novell Inc.

U.S. District Court
District of Delaware
No. 02-437-GWS
Decided October 17, 2002

PATENTS

(1) Infringement — Defenses — Fraud or unclear hands (§ 120.111)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Pleadings (§ 410.26)

Patent infringement plaintiffs' motion to strike affirmative defense of unclear hands is denied, since defense is stated in "short and plain" manner, and is "simple, concise, and direct," as required by Fed. R. Civ. P. 8, since, to extent defense involves fraud, it satisfies particularity requirement of Fed. R. Civ. P.

9(b), since defense alleges that plaintiffs knowingly, and with intent to deceive, failed to disclose relevant and material prior art to U.S. Patent and Trademark Office, and thus discloses nexus or relationship between conduct constituting unclear hands and infringement claim at issue, and since unclear hands is not indistinguishable from defendants' affirmative defense of inequitable conduct, and thus is not redundant.

PATENTS

(2) Infringement — Defenses — Fraud or unclear hands (§ 120.111)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Defenses — In general (§ 410.1801)

Defense of unclear hands is not identical to defense of inequitable conduct, since inequitable conduct is defined as "failure to disclose material information" or submission of false material information, with an intent to deceive, whereas unclear hands is broader defense encompassing "any willful act concerning the cause of action which rightfully can be said to transgress equitable standards of conduct"; thus, assertion of inequitable conduct defense does not preclude defense of unclear hands, even if both defenses may rest on same facts and result in same outcome.

Action by France Telecom S.A., T&E Diffusion de France S.A., and U.S. Philippe Corp. against Novell Inc. for patent infringement. On plaintiffs' motion to strike affirmative defense of unclear hands, and on defendant's motion for leave to amend its answer. Defendants' motion granted; plaintiffs' motion denied.

Steven J. Balick, of Ashby & Geddes, Wilmington, Del., for plaintiffs.
Donald J. Parsons Jr., John David Piroot, and Joy Mulholland, of Morris, Nichols, Aron & Tunney, Wilmington, for defendant.

Sted, J.

I. INTRODUCTION

On May 17, 2002, the plaintiffs, France Telecom S.A. ("France Telecom"), T&E Diffu-

Appeal Brief
January 25, 2008
Application No. 09/844,947

X. RELATED PROCEEDINGS APPENDIX

NONE